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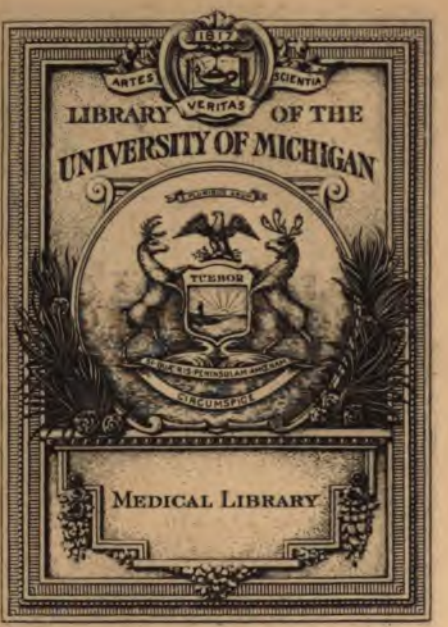
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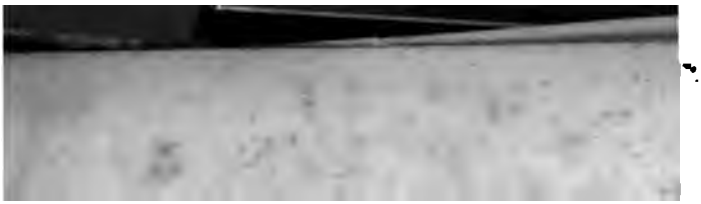

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PREFACE

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PREFACE.

During the twelve months which have now passed over our undertaking, we have met with even more encouragement and success than we anticipated. We may say, without risk of contradiction, that the London Journal of Medicine supplies a medium of communication with the profession, which was as much wanted in London as in Dublin and Edinburgh, where similar periodicals have long flourished, and must continue to prosper, so long as these great schools of medicine maintain their present reputation and efficiency.

Some zealous supporters have urged us to enlarge the Digest at the expense of the space devoted to Original Communications,—arguing, that we could then give the very same papers in a more condensed form, from the pages of our cotemporaries. This would, however, in our opinion, be a shameful want of reciprocity, and a scarcely honest plan of proceeding. At present, by devoting a large portion of each number to Select Original Articles, we not only give a higher character to the Journal, but we offer valuable matter to our cotemporaries in exchange for what we appropriate from their pages.

To the following gentlemen, who have contributed Original Articles to this volume, we tender our hearty thanks, feeling assured, that it is by the influence of their names, and by the value of their writings that the London Journal of Medicine has been placed in its present stable and influential position.

Alison, S. Scott, M.D., Edin.
Bird, Golding, A.M., M.D., F.R.S.
Bird, James, A.M., M.D.
Bowman, William, Esq., F.R.S.
Cormack, John Rose, M.D., Edin., F.R.S.E.
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Solly, Samuel, Esq., F.R.S.
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Tilt, Edward John, M.D., Paris.
Toynbee, Joseph, Esq., F.R.S.
Webster, John, M.D., F.R.S.
Williams, Charles J. B., M.D., Edin., F.R.S.

The Bibliographical Record has embraced critical, analytical, a descriptive notices of no less than one hundred and twenty-nine n works.

The Digest of the Journals has contained numerous abstrac reprints, and translations, arranged under the respective heads of:—

1. Anatomy and Physiology.
2. Practice of Medicine and Pathology.
3. Surgery.
4. Obstetrics.
5. Materia Medica and Pharmacy.
6. Forensic Medicine.
7. Psychology.

We have published copious and careful reports of the proceeding the Royal Medical and Chirurgical, the Westminster Medical, and Edinburgh Medico-Chirurgical Societies, giving an account of the deba as well as of the memoirs, read before these bodies. In doing this have generally avoided what was ephemeral, and calculated to incre the bulk, rather than the value of our annual volume. The proceedi of Foreign Academies are, with the exception of one month, incorpor with the Digest; and will so continue to be treated in future. Surgical Society of Ireland we intend to report regularly under division of the Journal reserved for Societies, as we think that proceedings are not sufficiently known and appreciated in England.

The Obituary Record, List of Appointments, and Miscellan Intelligence, having been greatly appreciated, will be continued in forthcoming volume.

From the above, it will be seen that no alteration is contemplate the plan of the work, simply because none better has been sugges and because the present is generally approved of.

For the future, our great aim will continue to be—what it has be to place the busy or isolated practitioner as much as possible on a with those whose leisure and locality afford them daily access to the libraries,—and to add an annual volume to his collection, which contain all that is new and valuable, with as little as possible of wh ephemeral or useless.

London, 1st December, 1849.

LONDON
JOURNAL OF MEDICINE,
A MONTHLY
Record of the Medical Sciences.
JANUARY 1849.—No. I.

ORIGINAL COMMUNICATIONS.

ON THE USE AND ADMINISTRATION OF COD-LIVER OIL IN PULMONARY CONSUMPTION.

By C. J. B. WILLIAMS, M.D., F.R.S., Professor of Medicine in University College, London; Consulting Physician to the Hospital for Consumption, etc.

THERE is no department of medical knowledge, which seems to me to stand so much in need of improvement, as that which relates to the operation of medicines. Even with regard to those most commonly used, it is surprising what a diversity of opinion prevails among different practitioners; and, as a necessary consequence, there is an almost equal variation in the modes and combinations in which each medicine is administered. Yet, it is pretty obvious, that as truth is essentially simple and constant, there must be much of error in such diversity of opinion and practice, and the sooner the truth is elicited by a careful and rational examination of facts bearing upon each subject, the more safe and satisfactory will our practice become.

The remedial influence of the COD-LIVER OIL particularly deserves this kind of investigation; not only because its mode of operation is a subject of much difference of opinion, but because the effects ascribed to it by many practitioners are of a very palpable and positive kind; and because such effects have not hitherto been obtained from any other remedial agent. The object of the present communication is to record the chief results of my own experience in the use of this remedy, in tuberculous and analogous diseases of the lungs. These results will be arranged briefly under the following heads:—

I. GENERAL RESULTS OF THE USE OF COD-LIVER OIL IN PHTHISIS PULMONALIS.

II. ON ITS MODE OF OPERATION.

III. ON ITS PREPARATION AND ADMINISTRATION.

I. GENERAL RESULTS OF THE USE OF COD-LIVER OIL IN PULMONARY CONSUMPTION.

I have prescribed the oil in above four hundred cases of tuberculous

disease of the lungs in different stages, which have been u
in private practice, during the last two years and a hal
I have 234 cases recorded in my note-books, with the r
treatment at various intervals; these constitute the chief
the present communication.

Out of this number, the oil disagreed, and was discont
nine instances. In nineteen, although taken, it appear
good; whilst in the large proportion of 206 out of 23
followed by marked and unequivocal improvement; this
varying in degree in different cases, from a temporary
the progress of the disease, and a mitigation of distressi
up to a more or less complete restoration to apparent heal

The most numerous examples of decided and lasting
amounting to nearly 100, have occurred in patients in w
termed the second stage of the disease, in which the tube
sits begin to undergo the process of softening, the com
signs being defective movement and breath-sound, with mu
and marked dulness below or above a clavicle, or above
tubular breath and voice-sounds towards the root, or inne
apex of the same lung. Such patients generally have
some months, latterly with muco-purulent or opaque
greenish expectoration, and have begun to lose flesh, colou
in such a degree as to excite alarm, and induce them to
advice. With many, night-sweats had occasionally o
hæmoptysis may have been present at a former period.

The effect of the Cod-liver oil in most of these case
markable. Even in a few days, the cough was mitigate
ration diminished in quantity and opacity; the night-s
the pulse became slower and of better volume; and the
and strength were gradually improved. The first chang
the physical signs was generally a diminution and gradu
the crepitus; the breath-sound becoming drier and cle
dulness, and tubular character of the breath and voice-sou
more persistent, and rarely exhibited a marked decrea
several weeks' use of this remedy, in conjunction with re
irritation. The tubular sounds, in fact, frequently bec
the first removal of the crepitus, which in phthisis as w
monia, tends to mask the signs of consolidation. In sev
however, in which I have had the opportunity of examini
under treatment, at several successive intervals of a mont
the gradual removal of the consolidations has been unequi
by the restoration of clearer vesicular breath and stroke
affected spots. In several cases, in which the disease ha
the restoration has never been perfect; even where the b
completely re-established, and all common symptoms o
entirely disappeared, there have remained perceptible
the breath and stroke-sounds; generally, with prolon
sound, which has more or less of a tubular note towards
lung of the same side. These signs, if unaccompani
dulness on percussion, I have learnt by the experience

not to consider as exceptional against recovery, for they appear to be dependent on the puckering of the texture, often with pleural adhesions and old deposits in the bronchial glands, so frequently found after death at the summits and near the roots of the lungs of persons who have not for many years exhibited symptoms of any pectoral disease.

As might be anticipated, a large number of the phthisical patients for whom I have been consulted, have been in the first stage of the disease, in which the tubercles or deposits are in the solid state. In these cases also, I have largely used the Cod-liver oil, and, so far as I have ascertained them, with not less satisfactory results; but a large proportion of these patients I have been unable to add to the numbers mentioned above, from my having seen them only once, or not frequently enough to enable me to determine with accuracy the results of the treatment. Such patients do not commonly consider themselves sufficiently ill to be under constant medical treatment; and although the good effect of the oil is commonly manifest in the abatement of cough and feverish excitement, and in the improvement of flesh and strength, yet the benefit is less speedy and obvious than in the more advanced stages of the malady. The physical signs of improvement are precisely the same as those which take place tardily in the second stage after the removal of the humid rhonchi; and in truth, the treatment by the oil combined with counter-irritation, where successful, seems to bring back the lungs from the second stage, that of incipient softening, to the first stage, that of simple deposit, which is tardier in its changes of increase or diminution, and may remain long stationary without any obvious alteration. The same remark is applicable to the chronic products of inflammation of the lung, which, as is known to the profession, I consider to approximate in nature to the higher class of tuberculous deposits.

The most striking instance of the beneficial operation of Cod-liver oil in phthisis, is to be found in cases in the third stage,—even those far advanced, where consumption has not only excavated the lungs, but is rapidly wasting the whole body, with copious purulent expectoration, hectic, night sweats, colliquative diarrhœa, and other elements of that destructive process by which, in a few weeks, the finest and fairest of the human family may be sunk to the grave. The power of staying the demon of destruction, sometimes displayed by the Cod-liver oil, is so marvellous, that I will attempt no general description, but will merely quote from my note-books brief abstracts of a few specimen cases, that shall plead for themselves.

Case 1.—Mr. C., æt. 30, consulted me August 6, 1846, by the advice of Mr. Orrell, of Cheltenham. He has had cough for six months, with expectoration, latterly profuse and opaque; also progressive, and lately rapid loss of flesh, strength, and breath. He has had occasional profuse night-sweats; and now suffers from diarrhœa. Pulse 116, very weak. There is no appetite. *Physical signs:* Dulness in both upper regions of the chest; most on right side, where, under the clavicle, are well-marked cavernous sounds (gurgling and imperfect pectoriloquy), with muco-crepitation and obstructed breath-sound below, to the fourth rib in front, and behind to below the spine of the scapula. Obstructed breathing and muco-crepitation also above and below the left

clavicle. *Ter die sumat Olei Jecoris Aselli puri cochleare mi gradatim augeatur ad cochleare amplum.* A pill, containing s copper, morphia, and creasote, was ordered every night diarrhœa continued; and the chest was to be rubbed every strong acetic acid, with a little acetum lyttæ. Diet to be no

Oct. 18. Very much improved in every respect. Has inc oil to six drachms three times a day. Has gained nine weight; walks four or five miles every day, and can run wit culty. Cough and expectoration trifling. Pulse, 90. Bowels confined. Cavernous sounds are still heard below the righ but they are dry, and the crepitus below and at the apex of th is now replaced by a clear but rather harsh vesicular breath-so ness very much diminished. Treatment to be continued. An mercurial aperient to be taken.

Feb. 8, 1847. Has continued to improve in flesh and stre coughs and expectorates a little. Takes still six drachms o times daily. Cavernous sounds still present, but less dist less dulness below. Sounds in left lung healthy. I have no patient since, but have lately heard that he continues to amount of health, and is engaged in active employment. H tinues to take the oil (but less frequently), having experienc of cough on suspending its use.

Case II.—Mr. K. (Walworth), æt. 56, of large frame, sea; accustomed to take fermented and spirituous liquors upwards of twelve months had been much harassed with copious expectoration, now muco-purulent; formerly, often the last few months had lost flesh rapidly, he thought to the forty pounds in weight. Now confined to bed; countenance h disfigured with acne. Appetite extremely bad; tongue loa sweats profusely at night. Pulse moderate in frequency, This man had signs of disease in both lungs; but in one (I h to note which) there were large cavernous sounds, with muc ing dulness and obstructed breathing. The liver was also e tender.

The oil and liniment were prescribed as in the former stimulants were prohibited, except bitter ale. In about thre visited him again, and found him so altered, that I did n him. His face was now plump and smooth, excepting a re the nose, the monument of his former excesses; his person even corpulent, which was natural to him; and he must ha his lost forty pounds. His appetite had improved immediat time he began the oil; and he was soon able to take not onl also fat and butter, which he had been unable to touch for ye had been an equally speedy cessation of the night-swea cough and expectoration were reduced more gradually, a occasionally troublesome. The improvement in the state was not equal to that in the general health, there being st loud cavernous sounds, and considerable dulness; but there increase of clear vesicular breath and stroke-sounds, and a absence of crepitus.

I heard of this patient continuing in this improved state twelve months later; but I have had no account of him since. He was so convinced that the oil had saved him, and was keeping him alive, that he set about making it for himself, and shewed me a fair specimen of clear, pale, tolerably-smelling oil, which he said he was able to obtain from the fresh cod livers at the rate of about 1s. 3d. a quart. This may suggest a hint to others, who are anxious to prolong their lives at an economical cost.

Case III.—Mr. J. H., æt. 28 (of Brighton); of consumptive family, several members having died of phthisis. Often had cough and expectoration for several weeks. During the early part of 1846, in consequence of close confinement to business, observed some failure in his general health and strength. A slight cough with expectoration came on about midsummer, and gradually increased, with occasional night-sweats, until the end of September, when he consulted me. His pulse was then 80, and weak, face pallid and rather sallow, with a slight hectic patch on each cheek. Dulness, deficient breath-sound, and moist crepitation from second rib to scapula on left side; tubular expiratory sound in both supra-spinous regions. Liver large and very tender.

I prescribed a mixture containing nitric acid with iodide of potassium (a combination which I have used very extensively, with much advantage, in such cases), and a rubefacient liniment for the chest and hypochondria. In a month, the cough and expectoration were much diminished, the sweats had ceased, the liver was no longer tender, and he had improved in strength; but he continued thin, and the physical signs were but little altered.

I then prescribed the cod-liver oil, which he was soon able to take thrice daily, in half-ounce doses. In ten days the moist crepitus at the left apex had almost disappeared, there being only a mucous click sound on deep breath; but the dulness and tubular sounds were unaltered. I now advised him to go to Naples for the winter, and to continue steadily the use of the Cod-liver oil with the rubefacient. He did so; and improved so much in all respects, that he fancied himself well, and before the end of the winter removed to Rome, where, tempted by the sight-seeing which is the snare of that city, he took cold, and had slight hæmoptysis; and he was advised to discontinue the oil. He then went to Florence, and became better; but being in a weak state, was directed to take the iodide of iron.

June 8, 1847. He returned, looking very thin, and complaining of much weakness, loss of appetite, and cough, with considerable muco-purulent expectoration. The disease had advanced in the left lung, there being now gurgling above the clavicle, and the dulness and moist crepitation more extensive than ever. The tubular expiration was distinct above the right scapula, and the breath-sound rather harsh below the right clavicle.

He was again ordered the oil; and he has continued to take it, with a few intermissions, up to the present time. On August 27, the report was, that he was much better in flesh, strength, and appetite, than he had been for years; but the cough continued, and the expectoration (muco-purulent) amounted to nearly an ounce daily. The moist cavernous sounds in the left lung had now given place to pectoriloquy and

cavernous breath sound; and there were dulness and deficient as low as the second rib, and half way down the scapula. T on the right side were healthy.

I have seen this patient repeatedly since, and have foun evidences of the gradual progress of consumptive disease in but, considering his delicacy of constitution, and the rapid co the disease exhibited in other members of his family, it is how slow his decline has been, and how much he has prese under a favourable change of air, he has regained,—his flesh an Experience has taught him to consider the oil as essential fort, as well as the means of prolonging his life; and I enti in this opinion, for before he began the use of the oil, mo years ago, the prognosis which I formed of his case was, tha not live three months.

Case IV.—Mr. H., æt. 21, consulted me in December 184 to occasional attacks of cough since childhood, when he had t cough severely; but was well and stout, often living freely years ago, when he had a severe inflammation, said to have liver; ever since which he has more or less suffered from expectoration (often thick and yellow), shortness of breat sional pain of left side. Moderate contraction of the left chest, with dulness, complete in the lower half, where noth heard but loud large gurgling. Above, the breath and voice- loudly tubular, with a faint mucous wheeze in parts. T subcrepitation below the right clavicle.

This patient derived great benefit from iodide of potassiu acid (sometimes with sarza), and external counter-irritation. time I considered the case to be one of dilated bronchi, described as a sequel of pleuro-pneumonia; but a year l cavernous sounds (gurgling, and cavernous breathing) deve upper lobe of the left lung, and tubular sounds in the right lar space, indicating the phthisical excavation of one lu pient deposit in the other; and this mode of development out of the remnants of pleuro-pneumonia is by no means At this time (the end of 1846) I put him on the Cod-liver has continued to take it, with occasional interruptions, eve flesh, strength, and general health, have been pretty well maintained, so that he has been able to pursue his occupa forte tuning (and sometimes even playing the instrumen parties); but his cough, although slight, except when a fresh colds, is never absent; and the lesions of the left remain stationary. But on the last occasion of my seei six months ago, the right lung remained free from disease

Case V.—Miss W., æt. 19, consulted me in January brother died of consumption at her age. She had taken months before, and ever since had cough, aggravated i ing spring, when she repeatedly spat a little blood. S in the summer; but during the last three months had worse, with frequent cough, copious greenish expectoration tite and flesh, profuse night-sweats, and cessation of t

The physical signs were dulness and deficient breath-sound, with moist crepitation below the left clavicle. Small gurgling, and imperfect pectoriloquy, were heard in the left supra-spinous fossa. The breath-sound was obscure above the right scapula.

By my advice, she went immediately to Torquay, where, under the direction of Drs. Battersby and Madden, she took the Cod-liver oil, which had the effect of speedily restoring her appetite, and ultimately her flesh and strength, and of almost removing the cough and expectoration. I saw her on her return to town in May, when she considered herself quite well; and her plumpness and complexion, steady pulse, regular catamenia, etc., betokened a re-establishment of general health. On examination, I found still considerable dulness in the upper part of the left chest, especially behind and above the spine of the scapula, where deep breath produced a croaking. Here the vesicular breath-sound was indistinct, and there was still tubular expiration. I could not convince her that she was not perfectly well; for she had the unanswerable argument, that she was going to be married. And married she was shortly after; and I saw nothing of her till last spring (1848). She then reported that she had continued pretty well, although never quite free from cough and expectoration, until last winter, when, being anxious to have a family, she consulted a surgeon, who told her that her marriage was unfruitful because she was the subject of disease in the liver; and, with a view to correct this, he put her on a course of small doses of blue pill, with occasional leechings of the sides, forbad the malt liquor which she had been accustomed to take, and much lowered her diet. Under this treatment, as might have been expected, her strength soon failed, she became very thin, the cough returned with much purulent and albuminous expectoration, and the sweats, inappetency, etc., were as bad as in her former illness. When I saw her (in February 1848), she was confined to bed; the pulse was 120, weak; tongue furred, and all hectic symptoms were well pronounced. Disease had made sad havoc in the left lung, there being a large splashing cavity in the upper part, and the lower being dull and impervious to air, except with a short moist crepitus. Tubular sounds were loud also in the right supra-scapular region; and the vesicular sound there, and below the clavicle, was rough with incipient crepitus.

I had but faint hopes of her improvement when I again ordered the Cod-liver oil, and a return, as speedily as her stomach would bear it, to the most nutritious food, and a moderate allowance of malt liquor. She did improve, however; and so rapidly, that in a fortnight she was able to come down stairs; and her appetite having been speedily reestablished, she regained a considerable share of flesh and strength, with the pulse reduced to 90, and the cough and expectoration amazingly diminished. The change in the physical signs was more tardy and imperfect: the chief difference consisting in the cavernous sounds becoming drier and hollower, and crepitus longer, with less dulness in the lower region. The improvement continued, and advanced, during the early summer months, so that she was able to take daily drives; and, in spite of my prohibition, she even went to an evening public amusement. In August, whilst at the sea-side, she sat for some time exposed to a draught

of air, which brought on an attack of acute pleurisy on the
and the effusion from this, compressing the only useful lung,
distressing and dangerous dyspnœa. This, however, yielde
ate antiphlogistic treatment; and in the course of ten d
able to resume the oil and good living with benefit. But
that, after such repeated trials, the constitutional powers
way, and the destructive disease is likely, ere long, to triu

Case vi.—Mr. B., æt. 21. First visited February 12,
been out of health six months; cough came on about two
and was soon attended with expectoration of much yello
matter, rapid loss of flesh, strength, and colour, with pr
sweats. Pulse now 120. Had a hectic flush. I found
moist crepitation at the summits of both lungs; but abo
scapula the crackling almost amounted to gurgling, and a s
toriloquy was heard there at times, louder towards the out
the scapula. Loud tubular voice and breath-sounds, with
tubular note on percussion, were heard in the inner and u
the right supra-scapular region.

This patient took the Cod-liver oil steadily for two month
a strong rubefacient liniment daily, and living well as
returned. I did not see him again at that time; but h
had, to all appearance, completely recovered his flesh, s
general health, and entirely lost his cough. He returned
pation in a warehouse in the City, and continued well unti
ing winter, when he caught cold, and the cough returned
bad symptoms. Mr. Holding, of Bridge-street, Blackfriars,
attendant, had again given him the oil; but it somehow di
its use was not continued. When I visited him, in May 1
him greatly reduced in flesh and strength, with a freq
pulse, and large cavities in both lungs, with very little pe
below them. I again prescribed the oil; but I do not kn
further than that he died in July. This case, taken in com
others, is useful in shewing that the good effects of the oil
manent, unless its use be persevered in long after apparen

Case vii.—Miss M., æt. 11, a delicate child, born in In
middle of April 1847, took the hooping-cough (which conti
till I saw her), first with much fever, lately with profuse m
expectoration, and she has in the last two or three weeks
to an extreme state of weakness and emaciation. The
good, but the fits of coughing often ended in vomiting.
her (June 25th, 1847), the pulse was 140, and the skin v
this feverish state seemed to have been induced by the
which she had been taking for a few days. The chest v
resonant, and the breath-sound puerile, except in the ri
region, where there was dulness, and very large mucous
most amounting to gurgling. There was a little loose crep
there, in other parts of both lungs.

I prescribed a saline with hydrocyanic acid, until the
abate; and then the Cod-liver oil; choosing, for its admin
times after the fits of coughing, to ensure its being reta

stomach. I did not see this patient again, but I heard from her medical attendant, Mr. F. Davies of Gower street, that she rapidly recovered, in a few days losing the cough and expectoration, and soon regaining her flesh, and has continued well ever since. There is no decisive evidence of the existence of tubercles in this case, as the signs might be produced by circumscribed pneumonia, ending in partial suppuration, or in dilatation of the bronchi with purulent bronchitis; but the general aspect of the case was as unfavourable as in phthisis, which in truth often does originate from such sequels of hooping-cough.

Case VIII.—Mr. D., æt. 25, applied to me (May 28th, 1847) complaining of cough of upwards of three months' duration, and in the last six weeks attended by copious purulent and clotted expectoration, dripping night sweats, and rapid emaciation. His breathing was very short, pulse very frequent and feeble. There was extensive dulness in the left chest, most complete above the fourth rib in front, where percussion caused gurgling, and on applying the stethoscope, large cavernous rhonchus was heard. Large tubular expiration in the right inter-scapular region. I prescribed the Cod-liver oil, and a liniment composed of strong acetic acid and chlorate of potass.

Aug. 11. Has steadily continued the treatment, and is now quite another person, his flesh and strength being completely restored, and his countenance indicating no ill health. Coughs only two or three times in the day, and expectorates as many yellowish sputa. He still finds his breath very short on exertion. I found considerable dulness remaining in the left chest, with absence of vesicular breath-sound down to the fourth rib. The cavernous sounds were, however, much less distinct than formerly, consisting of a bubbling between the second and third ribs on his speaking or coughing. The tubular expiration remained at the root of the right lung.

I have not seen this patient since, but have lately heard from his brother, who is a clerk in Messrs. Bouverie's bank, that he has continued well ever since, now fifteen months, and is able to pursue his employment.

Case IX.—Miss S. D., æt. 28, of consumptive family; first visited September 3rd, 1847, with Mr. Sawyer of Pentonville. Had a slight cough ever since she took some cold baths in the summer of 1846. A glandular swelling formed afterwards below the jaw, and continued until the last two months. In March 1847, a remarkable eruption of purpura appeared, and as it subsided, the cough became more troublesome, and the flesh and strength visibly declined. In the last two months she had become much worse, with distressing cough and shortness of breath, evening fever and night perspirations, absolute loathing of food, and rapid emaciation. A week ago, on returning from Margate, she expectorated a few teaspoonfuls of blood, since which the cough and tightness of breathing have been somewhat easier. I found her much emaciated, and very tremulous and feeble, with a rapid running pulse, difficult to count. There was complete dulness over more than the upper half of the left chest, with a mixture of large gurgling and pectoriloquy. Below, the stroke sound was less dull, and moist crepitus only accompanied the respiratory movements. The breath was weak,

with moist crepitation, also above the right clavicle; and
expiration was loud at the root of the right lung.

This patient seemed in so hopeless a condition, and had
of tongue and delicacy of stomach, that I did not like to s
the annoyance of a trial of the oil, and therefore prescribed
draught with nitric acid, and a linctus for the cough.
again in a week, and found her no better, but obviously ra
ing, with the same insuperable disgust at nourishing food.
that matters could not well be worse, I did then order the
my leave, expecting fully to hear of her death in a few w
ever, I heard nothing of her for two months, when one o
came to consult me about her own health. I learnt, to
that her sister was not only alive, but comparatively fat and
little to complain of but hunger, and that "she could no
the run of the house to eat any and every eatable to b
This marvellous restoration of the appetite followed the fi
of the oil; and the diminution of hectic, sweats, cough, and e
speedily followed. In January 1848, I was requested to
on account of any check in her progress, but because the c
not returned as might be expected, in her improved sta
On entering her room, I looked around it more than o
could recognize my patient, so entirely was she altered in
and she unquestionably was the healthiest-looking per
The pulse was at 80, of moderate strength, and her t
The fair outside was not, however, matched by an equal
within. The dulness and cavernous sounds still continued
half of the left lung, but with much less gurgling of liq
short crepitus of the inferior parts of this lung had give
harsh and somewhat rough breath-sound. The tubular
mained in the right inter-scapular region, but the breath-s
and clear above the right clavicle. That which seemed w
general health, menstruation, was in a few weeks re-estab
the use of a daily aloetic pill.

This lady called on me a fortnight ago, having been we
ever since, only acknowledging a slight cough and sho
exertion. She has continued stedfast in the use of the
thrice daily; and happily she believes and feels the truth
her,—that it is as the staff of life to her. On examining
this last occasion, I found clear but irregular stroke and
on the left side as high as the second rib in front, and t
the scapula behind; above is dulness, and a dry cavern
the breath and voice. There is also collapse of the wal
below the clavicle. The tubular expiration continues in th
scapular region, but in less intensity than formerly.

Case x.—Miss E. S., æt. 26, of diminutive delicate fra
of Mr. Browne of Camberwell), was first seen by me Sep
1847. A brother and two sisters had died of phthisis.
been a slight cough for six months; and one month ago,
bath, she coughed more violently than usual, and brought
ounces of blood. She was treated with leeches, acetate

and there was no return till four days ago, when hæmoptysis recurred in the absence of the catamenia, and about an ounce has been brought up daily. The pulse was frequent and feeble. No heat of skin. Considerable dulness in the left chest, chiefly in its upper part. Moist crepitation superseding breath-sound below the left clavicle. Tubular breath-sound (superseding vesicular) above left scapula. Tubular expiration, with vesicular inspiration, above right scapula.

Leeches, followed by cupping-glasses, were ordered to be applied below the left clavicle. Draughts with nitric and hydrocyanic acids and hyoscyamus. The acetum cantharidis, diluted with acetic acid, to be rubbed on the chest. When I saw her about a month after, I found that the hæmoptysis had not returned, but the cough continued, with much purulent and albuminous expectoration; and hectic, with sweats and progressive emaciation, had become distressing. I now detected a considerable cavity in the left lung. The oil was now prescribed, but owing to the weakness of her stomach, she was unable to take more than a small teaspoonful three times daily; and when I saw her after the lapse of three or four weeks, the consumption was obviously making rapid progress; the bones projecting so much, that it was difficult to auscultate, and the cavity having extended its signs and dulness more than half down the left side. I strongly urged an increase in the dose of the oil, and recommended as a vehicle the compound infusion of orange-peel with a little hydrocyanic acid; and by the aid of this she was enabled to take above a dessert-spoonful thrice daily. After this the improvement was manifest and progressive, although much more gradual than in the last case. In April the catamenia returned, and she had regained her ordinary amount of flesh, whilst the cough and expectoration were very trifling. The signs of the cavity continued, but within narrower limits, and a pretty clear stroke-sound and vesicular breath-sound were now found in many parts of the scapular and mammary regions, which before were quite dull. The improvement has continued up to the present time, as far as regards the phthisical symptoms; but when I last saw her, there had been so much mental depression as to excite apprehensions of another disorder, to which there is a strong family predisposition.

Case xi.—Mr. E., æt. 25, first consulted me September 13, 1847. Has been accustomed to rather free living. Eighteen months ago had syphilis, and was under mercurial treatment for three months. Last April had an eruption on the skin, for which he was under the care of Dr. Chambers, who prescribed for him iodide of potassium and sarza. There was at that time a slight cough, and when the eruption was cured, the cough increased, and has continued ever since, with greenish or yellowish opaque expectoration. In the last two months he has become much thinner, and has frequently had profuse night-sweats, and he says that his breath and strength are failing him almost daily. In the last few days he has been suffering from a bad attack of piles.

On examination, I found defective motion, and almost perfect dulness in the left front, from the scapula to below the mammilla. About an inch above the latter point, was large loose gurgling; above and below, short moist crepitus without breath-sound. In the inferior regions of

this side, the breath-sound was feeble, with slight sub-c
parts. In both inter-scapular spaces there were loud tubul
the breath and voice.

The oil was prescribed in increasing doses; a liniment,
acetic acid, acetum cantharidis, and iodide of potassium;
of confection of senna, with sulphate of potass, sulphur,
poppies. Sept. 23. Takes a table-spoonful of oil thrice d
already improved in strength and general feelings. The
ceased, and the expectoration and cough are considerably
The piles are well. The gurgling was less liquid, and
and cavernous breath-sound were now heard; but there wa
change in the dulness. He was directed to pass the winte
or the Undercliff, and to persevere with the treatment.

May 26, 1848. Had most rigidly adhered to all direc
most carefully, and never omitting the oil or the liniment.
winter at Torquay almost without any disturbance of his
improvement. He now is stout and hale-looking; has
habit of walking or riding almost all day; only feels his b
short, and there is still slight cough with a little yellow e
chiefly confined to the morning. In the last two or th
sputum has been a little tinged with blood (this was the
calling on me), and the bowels have been rather confined.

I still found dulness, and dry cavernous sounds, in th
but they were now confined to the space of about an in
below the clavicle; the breath and stroke-sounds below
being clear and vesicular, without any crepitus. The tubu
the inter-scapular regions were also much diminished. He
to take an acid aperient every morning, and to leave off m

Oct. 18. Has been almost perfectly well during the
cough and expectoration being but trifling, and, as he say
and strength are as good as ever. For the last two month
off the oil. The dulness at the left apex is much diminish
are no cavernous sounds; only a tubular whiffing and mut
phony between the clavicle and the scapula, mixed with ves
sound at every part. The tubular expiration at the root o
now scarcely more than it often is in health.

There seems little reason to doubt that this patient
recover; but as a precautionary measure, I have advised
another winter at Torquay.

The foregoing cases are selected, because they are of so
and because my brief notes of them are sufficiently expli
some representation of the amount and duration of good w
treatment. The whole number of cases in the third stag
(that is, with one or more cavities, as indicated by physica
have been manifestly improved under treatment with the
amounts to sixty-two, up to the end of August. In thirty-f
know that the improvement has continued up to a recent
I saw the patients, or had reports. Eleven cases, wh
decided improvement for a time, have since again decli

nated in death. Of the remaining seventeen I have had no recent report, and I do not know whether the amelioration has been permanent or not.

The results above stated give to Cod-liver oil, even as a tardative or palliative in phthisis, a rank far above any agent hitherto recommended, whether medicinal or regiminal. I have made extensive trials of several other medicines of reputed utility in this disease, and on a future occasion may lay before the profession the results of my experience, which prove some of these agents to be by no means inoperative or useless; and I still consider them to be often salutary aids in the treatment of this formidable malady, but their utility and harmlessness fall so far short of those of the Cod-liver oil, that I regard them now chiefly as subsidiary means, and the more likely to be useful, in proportion as they facilitate the exhibition or continuance of this superior agent.

If the experience of the profession at large should accord with my own, and with that of those who have preceded me in recommending the Cod-liver oil, our prognosis with regard to phthisis must undergo some modification. To what extent this modification may reach, cannot be determined, until such cases as those which I have recorded have been tested by years of time; but even now, when we repeatedly find forms and degrees of disease, that former experience had taught us to be utterly hopeless and speedily fatal, retarded, arrested, nay sometimes even removed and almost obliterated by various processes of restored health, we must pause ere we, in future, pass the terrible sentence of "no hope" on the consumptive invalid.

II. MODE OF OPERATION OF COD-LIVER OIL.

It seems scarcely necessary to discuss the question, whether the oil owes its efficacy to the iodine which it contains. The amount of this element is so minute as hardly to admit of quantitative measurement; and to ascribe virtue to such infinitesimal fractions, when ordinary doses have no corresponding activity, is to adopt the fanciful and mischievous speculations of the homœopathist, which cannot be too strongly deprecated by the scientific and conscientious practitioner. Several of the patients whose cases are cited above, and many more of whom I have records, had taken iodine in various combinations before taking the oil, but without any effects approaching to those which ensued on the change of treatment. I am by no means incredulous of the salutary operation of iodine in some forms of tuberculous and scrofulous disease; indeed until I used the pure oil, I considered it to be the most useful remedy; but in the last two years, the oil has so far surpassed it and every other medicine in beneficial operation, that I am convinced that it acts by a virtue peculiar to itself.

A perusal of the foregoing cases, and of others on record, at once suggests that the cod-liver oil is a highly nutrient material; and it is commonly admitted by all practitioners who have used it, that it possesses, in a pre-eminent degree, the property of fattening those who take it for any length of time. But its nourishing influence extends beyond the mere deposition of fat in the adipose tissue. The muscular strength and activity are sensibly and sometimes rapidly increased under its

use; whilst the improved colour of the cheeks and lips im
of the vessels with more and better blood. Researches a
elucidate this subject more clearly; but the analysis of the
case of phthisis which had been under treatment by the
most remarkable increase of the animal principles of the
ally the albumen, which amounted to thirteen per cent.,
double its usual amount, whilst the fat was not materially
and the fibrin, which is generally high in phthisis, was r
the normal proportion.[1] If these results should be confirm
observation, there will be no difficulty in understanding
liver oil should prove a nutrient to all the textures; alt
yet be a question, whether it does so by direct conversion
or fibrin, or by preventing the waste of the albuminous
protecting it from the action of the oxygen absorbed in re

But there is much reason to believe that the oil itself p
able in supplying the fat molecules which appear to b
healthy nutrition, as forming the nucleoli of the primary
ments of tissues. The important part which fat thus pe
process of nutrition, was first pointed out by Ascherson o
that fat forms the central molecules of the elementary
cytoblasts of textures, is generally admitted, although f
Ascherson in his opinion that the fat forms the cells b
coagulating albumen around it. It seems to have been
Dr. Ascherson and of Dr. Hughes Bennett, who cites it,[2] t
lous diseases there is a want of this fat, and that the alb
from the food in digestion is liable to be precipitated in
able condition (as tubercle, etc.) for the lack of it.
well ascertained that scrofulous and tuberculous deposit
being deficient in fatty particles, contain them in greater
exists in the blood, or in its plasma in a healthy state.
tion which I have given[3] of the chief salutary action of the
is not that it supplies fat where it is wanting, but that it
a better kind, more fluid, more divisible, less prone to
more capable of being absorbed into, and of pervading,
of the body: thus affording a fine "molecular base" in
therein, a material for a better plasma; and being conv
blood distributed through capillaries and around deposits
tity as to soften and dissolve the crystalline and irregul
fat scattered through them), it renders them more amena

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[1] Simon's Animal Chemistry, translated by Dr. Day, vol. i, p. 280. Lo

[2] Bennett on the Oleum Jecoris Aselli, p. 58; Edinburgh, 1841. In a
the "Edinburgh Monthly Journal of Medical Science," the editor, Dr. H
some one writing under his direction), accuses me of plagiarism, in adopti
of the action of the Cod liver oil without acknowledgment. But this exp
not his, but quoted from Ascherson and other German writers (and is com
the notion of the oil acting by its iodine), is by no means that which I
seen on reference to the text The professed review which contains this
such gross misunderstandings of the work which it criticises, and such a
jealousy, that I do not think it needful to notice it further.

[3] Principles of Medicine, 2nd ed. p. 403; London, 1848.

cesses of reparation and absorption. Hence its beneficial operation is more marked in those stages of tuberculous disease in which the deposits abound in fat: that is, at the period of maturation and softening; although from the extent of mischief already done, both to the part and to the system, the benefit may not be so lasting as in the early stages of the disease.

One of the most remarkable effects of the Cod-liver oil, in some cases of the second and third stage of phthisis, and in other forms of scrofulous disease with extensive suppuration, is the speedy removal of the sweats and other symptoms of hectic fever. This can hardly be ascribed to its direct nutrient powers; but I think that it is due to its influence in diminishing the unhealthy suppuration which is excited around the softening and excavated tubercles. If my views of the chemical nature of suppuration,—that it consists of a further oxydation of the exudation corpuscle,[1]—be correct, then it is quite intelligible that the presence of so highly combustible a material as oil must check this process of oxydation, and thus prevent the degeneration of the corpuscles into the aplastic state of pus globules. In fact, if it should prove to be correct, according to the analysis above quoted from Simon, that Cod-liver oil removes the excess of fibrine in the blood of phthisical patients,—this also equally accords with my notion, founded on the inferences of Mulder and others, that the formation of fibrine is due to a process of oxydation of the albumen (forming a deutoxide of protein, according to Mulder); and that, by preventing this, the oil removes that tendency to cacoplastic inflammatory deposits which largely contribute to increase the consolidation of the lungs and other organs in phthisical subjects.

In making these surmises, I would not be supposed to adopt the idea of Liebig, that pulmonary consumption is the result of an excess of oxygen in the blood at large, consuming its materials, and those of the textures. Many of the symptoms, as well as the organic lesions of the disease, shew that there is a great deficiency in the process of respiration by which oxygen is supplied to the blood; and some of the most rapidly fatal cases, exhibiting speedy emaciation, are, throughout their course, in a condition bordering on asphyxia. Here is obviously a great want of oxygen in the blood,—nay, I believe the excess of fat in the liver, and in the tuberculous deposits, in these instances, to be caused by this very scanty supply of oxygen to the system. But although it is deficient in the system, enough oxygen comes into contact with the exudations from cavities in the lungs, and from the diseased bronchi in their vicinity, to effect the formation of much unhealthy pus; and it is the formation and reabsorption of this that seems to excite the hectic of phthisis, as well as to keep up much harassing local irritation. Now, I believe it to be by diminishing these exudations, and checking their further oxydation into pus, that Cod-liver oil acts so promptly in reducing the hectic sweats and purulent expectoration of phthisis, which accelerate and aggravate its destructive progress.

The limits of this paper will allow me to notice but briefly one more

[1] Principles of Medicine, 2nd ed. p. 295.

point in regard to the action of Cod-liver oil. Unlike oth it rarely disorders the stomach or bowels, or disturbs th the liver. If taken in any quantity, vegetable oils con and animal oils turn rancid in the stomach, causing hea attacks, and even jaundice. On the contrary, Cod-live improves all the chylopoietic functions, and distinctly action of the liver; so that, as in several of the cases abo appetite and power of digestion are restored, and patien to take an amount and variety of food beyond what th tomed to, even in health. I cannot help thinking, th influence of the oil is due to its containing some biliary p both favours its divisibility in the process of digestion, the natural secretions of the liver. The flow of bile, as the colour of the fæces, is generally free and uniform du tion; and I must not omit to notice another fact, whi be connected with increased activity of the liver. I hav instances remarked that the bulk of the liver (as determi sion) becomes augmented during its use; yet without any other sign of disorder. In fact, this seems to be a hypertrophy, induced by the oil augmenting the bulk a the hepatic cells, and supplying at once a material the r this secretion, because it has already within it some elen matter which served a similar purpose in the liver of th at a lower temperature, and less favourable to the activity The observation of this influence of Cod-liver oil has led several cases of functional and structural disease of th by defective or depraved secretion, and in some insta satisfactory results, especially in one of habitual formatio which had resisted all kinds of treatment, and was rap the health: the use of the oil has entirely stopped the a restored the patient to good health.

It appears probable, therefore, that although other equally influential in promoting nutrition, and in prev moving the cacoplastic and aplastic exudations of scro the oil from the cod's liver, and perhaps those from the fish, have the advantage in point of digestibility, and in action of the digestive and biliary organs.

III. PREPARATION AND ADMINISTRATION OF THE COD-

It may seem somewhat strange that this remedy, v long employed and valued on the continent, and in som ties in this country, and of late years has been strong attention of practitioners, both at home and abroad, sl so slow in being received into general use. If the exp practitioners accords with my own on this point, I wo reason of this tardy introduction, the disgusting smell a oil as it has been commonly prepared, and an impr prevalent that the efficacy of the remedy is connected v sive properties. This notion was favoured by Dr. Hug his monograph published in 1841. At that time I ma

of the oils, selecting the clearer specimens of the brown oil, as recommended; but I found that so few patients could take it at all, and fewer still were able to persevere with it, that the inference seemed to be, that however German and Dutch stomachs might bear it, English ones could not, at least among the upper classes. It was not until I had witnessed some striking examples of benefit ensuing from the use of the pure oil, prepared according to Mr. Donovan's method, that I began again to make trial of it, and to reflect further on its mode of operation when freed from all impurities; and the results are recorded in the preceding pages. They will not, I think, be considered less favourable than any that have been previously published; and their value will be much increased by the statement that in all instances I have prescribed oil as *free from taste and smell as could be procured*; and so little difficulty has been experienced in its administration, that the proportion of cases in which it has decidedly disagreed has not amounted to four per cent.

The inoffensiveness of the oil implies the use of no process by which it can be deprived of its proper qualities. All that is required is, to obtain it *pure and fresh*, as it existed in the hepatic cells of the healthy fish when alive, without contamination by any process of putrefaction, roasting, boiling, or the like. On the contrary, the disgusting smell and taste, and dark colour of the impure oil, proceed from the putrefaction and heat to which the livers are subjected, for the purpose of obtaining from them the utmost quantity of oil; hence it becomes highly rancid, and holds in solution or suspension various putrid and colouring matters derived from the corrupting cells and tissues of the liver.

It is not my intention to describe the details of the process by which the oil may be obtained in the greatest purity; but I may mention the following particulars, to which it is necessary to attend, in order to obtain a good product. The livers should be used as soon as possible after the death of the fish, every hour deteriorating the quality of the oil. The pale, plump livers should be preferred; those which are flabby and dark in colour should be rejected as unhealthy. The livers, after being quickly pounded into a pulp, should be mixed with water of the temperature of about 120°, then filtered; and, after standing long enough, the oil is to be decanted from the filtered liquor, cooled to the temperature of 50°, and again filtered. The whole process is to be accomplished with as little delay as possible, and in closed vessels, to prevent the air from giving to the oil the slightest degree of rancidity. For the same reason the vessels, in which the oil is preserved, should be full, well corked, and kept in a cool place. I recommend the second filtration after cooling, to remove the more solid part of the oil, the stearin and margarin, which not only further clears the oil by its separation, but, by leaving a preponderance of elain, gives to it more of that perfectly liquid and penetrative quality which promotes its absorption and diffusion through the fluids and tissues of the body.[1] My usual

[1] The oil most commonly used by my patients has been carefully prepared by some of the most eminent operative chemists in London, particularly Messrs Bell and Co. of Oxford.

mode of administering cod-liver oil, is in doses of a tea-spo
ally increased (if the stomach bear it) to a table-spoonfu
some pleasant-flavoured liquid, such as diluted orange
Infus. Aurantii Comp., with a little Tinct. and Syr. Auran
cle should be suited to the taste and stomach of the patie
of our success in exhibiting the medicine will depend on
to keep the palate and stomach at peace with the oil.
instances I have found that the addition of a little dilut
to the vehicle will make it more grateful to the palate, a
viceable to the stomach; and we may often combine
medicines which are not disagreeable, and thus fulfil the
palliating symptoms by their means. The fittest time
oil, is from one to two hours after the three first meals of
this time the chyme is beginning to pass from the sto
duodenum; and it would appear that the oil passes quic
given at this time it causes none of those unpleasant eru
are apt to occur when it is taken either before or with fo
nothing in the oil for the stomach to digest; and the les
into contact with it, and the sooner it passes out of it, the
it mixes with bile and pancreatic juice in the duodenu
and absorption begin and proceed, as in the case of all
Herein, too, we see a reason why the oil does not agre
with the palate or stomach, when mixed in an emulsio
with liquor potassæ, as recommended by some practition

In conclusion, I repeat, that further observations, a
are requisite to determine with accuracy the extent to w
can control or remove tuberculous disease of the lun
state it as the result of extensive experience, confirm
consideration of its mode of action, that the *pure fresh Oi
of the Cod, is more beneficial in the treatment of Pulmona
than any agent, medicinal, dietetic, or regiminal, that
ployed.*

7, Holles Street, Cavendish Square, 18th Nov. 1848.

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street, Mr. Squire of Oxford-street, and Messrs. Allen and Co. of Pl
street. The oil supplied by these chemists, when fresh, has a sweet
bland taste, and only acquires a fishy odour and flavour on exposur
Good specimens have also been sent to me from Messrs. Taylor, o
Twinberrow, of Edward street. But the sweetest oil that I have yet
pared on a large scale on the northern coast, by Messrs. Hogarth a
mongers, and is now supplied by Mr. Barclay, of Fore-street, and othe
druggists. This oil has a pleasant odour of fresh sea-weed, and is more
other specimens. It has further the great recommendation of being
than that prepared in town; and if on trial it should be found to be
has been proved to be, its moderate price will ensure a preference
consumed for months, and even years, at the rate of three tablespoo
ought, if possible, to be supplied on the terms rather of an article of die
drug. I understand that much of what is sold in the market as c
from the livers of the skate, the hake, and other coarse fish. Such adul
to be deprecated; but it is a subject deserving of investigation, whet
a pure oil of analogous therapeutic properties, may not be obtained
price which would place it within the reach of the lower classes, w
and variously from diseases of malnutrition.

OBSERVATIONS ON CLEFT PALATE; WITH CASES ILLUSTRATING THE NEW OPERATION OF STAPHYLORAPHY.

By WILLIAM FERGUSSON, Esq., F.R.S., Professor of Surgery in King's College, London, and Surgeon to King's College Hospital.

Four years have now elapsed since I had the honour of reading some observations on Cleft Palate, and the operations for the relief of this malformation, before the Royal Medical and Chirurgical Society; and three years have passed away since that communication was made public in the *Transactions* of the Society.[1] During this interval my attention has been very frequently called to the same subjects; and as the views which I then advanced were in most respects of a novel character, I feel in some degree bound to state the results of further experience regarding them. In the second edition of my work on *Practical Surgery*,[2] I gave further proof of the accuracy of my views, and at a later date again referred to the subject, in one of the lectures at King's College, which was subsequently published in the *Medical Times*,[3] under my own superintendence. The views regarding this malformation, and the particular operation resorted to for its relief, are as yet, I believe, so little known to the profession, that I trust I may not be deemed presumptuous in again endeavouring to draw the attention of my brethren to subjects which, I am disposed to think, have had less consideration than they really deserve. In France, in Germany, and in America, many distinguished surgeons have written upon staphyloraphy, and numerous examples have been given of the success of the operation; but, strange to say, the proceeding has attracted little more than casual notice from the surgeons of Britain. Since Alcock first performed the operation in this country in 1821, it has been frequently repeated, but at dates so few and far between, that success, when achieved, has produced but little impression either upon the profession or the public. With few exceptions (among which I may refer to the brilliant examples occurring to Sir Philip Crampton[4]), the results of surgical interference have been so unsatisfactory, that teachers have done little more than describe the process which was followed by Roux, to whom the honour is due of having devised and first performed the operation. My own personal experience in early life in such cases had led me to conclude that an operation could only be successful in the most favourable instances, and it was not until I had made a careful anatomical examination of the parts, that I became convinced that more might be done by the surgeon than had yet been accomplished. At least it appeared to me that the operation might be put upon a more scientific basis, and that surgeons might be made aware of the nature and effects of the hap-hazard collateral incisions which had been pro-

[1] Vol. xxvii. [2] P. 538. [3] Vol. xvi. 1847.
[4] Dublin Journal of Medical Science, July 1, 1843, vol. xxii.

posed for the purpose of relaxing the soft palate dur
required for union in the mesial line. Roux's experien
tion had been great, and his success was deemed very
two-thirds of the simple cases, and one-third of those w
plicated, having derived benefit from the proceeding.
Mütter, of Philadelphia, and Dr. J. M. Warren, of Bosto
much greater proportional success: for out of twenty-one
Mütter had succeeded in nineteen; and Dr. Warren h
successful in thirteen instances out of fourteen. Results
well content the most sanguine. It was not, then, w
shewing greater numerical results that I was first induce
this subject, but because I had acquired a knowledge of t
physiology of the parts of which I believed surgeons to
viously in ignorance, and upon which I had founded vie
ings more in accordance with scientific surgery than
acted on, and which, if proved to be correct, might ena
to calculate on the result of the operation with a certa
unknown. I venture with great diffidence to use such
reference to a subject, in connexion with which the nam
eminent surgeons of the day may be found; but it is
I presume, that the anatomy of cleft palate had never
until I had the honour of doing so, nor had there be
allusion made to the actions of the parts in the vario
of the operations originally performed by Roux, whic
gested by that gentleman himself, by Dieffenbach, Li
Warren, and others. I must refer to my original
alluded to, for various particulars which need not be
It will be sufficient for my present purposes if I touch u
features of that communication.

The extreme mobility of the two portions of the sof
palate had attracted the notice of all observers, but littl
tion had been directed to the moving powers. It wa
examining a case of the kind, for the purpose of deter
operation, to be guided by the facility with which the
the uvula come together during deglutition. If a p
palate be desired to swallow a little water, slowly and
partially open, the back parts of the fissure may be s
each other, and in most instances actually come in
they seem to do so readily, the prospects in this respec
for an operation, and *vice versâ*. The cause of this
never, I believe, been inquired into. So accurate
Malgaigne[1] had been content to state, that it was "a
of which it is difficult to give an explanation." Th
clearly attributable to the superior constrictor of the pl
upper portion of the middle constrictor. The semicir
muscles form on the back and sides of the pharynx
glutition, drawn into a straight line almost, the fibres
inwards, and some of them downwards, so that the

[1] Médecine Opératoire, Paris, 1834, p. 486.

immediately in front—being the two portions of the split palate—are pushed in similar directions, and thus the posterior part of the fissure is made to close. The anatomist is more familiar with the action of pulling than that of pushing, as the result of muscular contractions. The lateral movements of the soft margins of the fissure could not escape observation, but, in so far as I know, they had never been accounted for. Doubtless any anatomist would have guessed that the levatores palati caused the elevation of these parts. He could not, however, have supposed that the palato-pharyngei could enlarge the fissure; on the contrary, in accordance with the doctrines of Dzondi and Müller (which are those usually entertained), he might suppose that these last-named muscles would in reality close the fissure, for their action, in the normal state of the parts, is to bring together the posterior pillars of the fauces. An examination of the course of the fibres of these muscles in the cleft state of the palate will shew beyond a doubt, that one of their actions will be to pull the edges asunder: in this state of the parts the anterior, or upper extremity of each muscle, is attached to the posterior margin of the osseous palate, and the fibres in their progress downwards, towards the sides of the pharynx, form a convexity upon the margins of the soft flap (in fact, it is this convex part which constitutes the most bulky portion of the flap): thus the action of each muscle tends towards the straight line, the parts are drawn asunder at such a time, and consequently the gap is enlarged. In the ordinary condition of the palate, these muscles have their fixed points above in the mesial line of the soft palate, and acting towards that line, they must necessarily close or cause the posterior pillars to approximate, in accordance with their supposed functions. Perhaps during deglutition in the cleft state, the upper margin of the superior constrictors forms, for the instant, a kind of fixed point, which permits the lower portions of the palato-pharyngei to act in the normal manner; but during the quiescent state of the constrictor muscles the palato-pharyngei, when exerted to action, must tend to enlarge the fissure in the mesial line. The tensor (or circumflexus) palati seemed to me to possess so little muscularity, and besides to have such a limited sphere of action, that I deemed its influence upon the movements of the palate as of little consequence, and I entertained similar views with regard to both the palato-glossus and azygos uvulæ.

In accordance with these anatomical and physiological data, I inferred that if the chief muscular action affecting the soft palate could be done away with,—either for a short time or permanently,—there would be a greater probability than ever of union taking place in the mesial line when the parts were united by the process of staphyloraphy, and on this principle the proceedings which I recommended were founded. As a preliminary step to the ordinary operation, I suggested the division of the levator palati on each side, and also, if it seemed needful, of the posterior pillars of the fauces, whereby large portions of the palato-pharyngei might be cut across. I also then thought that the anterior pillars, each containing the palato-glossus, might possibly require division. To effect these different incisions, I used a small peculiarly

curved blade[1] for the levator muscle, and common curve
the others.

These doctrines have been acted on ever since the subje
public, and I am more than ever satisfied of their correctn
ence has taught me the propriety of certain modifications, a
such further insight into the whole subject, as to induce m
the publication of the "observations" which I have had the
of making during the last three or four years. By far the gr
of cases of cleft palate which I have recently seen, have b
operation. Many have been infants and young children
believe it is impossible to effect any such proceeding, an
the adults the gap has been so wide, or the soft part
so narrow, that an operation has not been considered advis
is no operation in surgery which so thoroughly requires
and assistance of the patient himself, and as neither of
tial points can be expected in early life, all manual
must of necessity be delayed until the patient's goo
courage shall be such as to bear him through the variou
operation, which, even in its simplest form, requires a l
heroic indifference on the part of the sufferer. I have op
occasion on a boy only eleven years old, who behaved ad
in general, up to the period of puberty, there is a reluctа
quietly to any surgical interference.

In a large proportion of cases of cleft palate, the fissur
portion of the bones as well as the soft velum. Such ca
so favourable for an operation as when the soft parts alone
When the bones are defective, the soft margins are usuall
gap being wide in proportion, and invariably the muscul
of the flaps are more conspicuous than when the fissur
the soft velum. In the natural state of the palate the m
ments are not so remarkable as in the abnormal conditi
think that either the levators or palato-pharyngei act wit
as in the cleft state, and the greater the cleft, I am di
the greater is the muscular action. This does not depend
of muscular fibres, but rather arises from the comparati
the parts. The smaller the fissure, then, the less consp
muscular actions—the nearer the normal state, the grea
blance in action to the ordinary muscular movements.

When I first drew attention to the anatomy of the cl
pointed out the motor powers likely to prevent the succe
nary operation of staphyloraphy, I was chiefly anxious to
and where the muscles of the palate might be divided f
of ensuring that state of quiescence which appeared s
secure union in the mesial line. I wished to put the op
scientific basis which characterises the modern operation
bent knee, strabismus, &c. Although fully satisfied of
of my views, I have occasionally had difficulty in explai

[1] Practical Surgery, 2nd ed. p. 531.

should be movement in the flaps after the incisions requisite for the division of the muscles in question had been made. At first I was puzzled on this point, but I believe that I now understand the cause. It generally happens, even after the supposed division of the levator muscles, that considerable jerking in the flaps may be observed, and such movements I have no doubt are produced by the palato-pharyngei. Supposing the two pillars of the pharynx divided, the portions of these muscles in front may yet vary in length according to their contraction or relaxation; and if their anterior extremities still remain in connection with the posterior margin of the hard palate, the action may be sufficiently vigorous to give the impression, as the parts are looked at, that little good has resulted from the preliminary incisions. If, however, the parts be seized with the forceps, and pulled towards the mesial line, the comparatively feeble influence which the muscles now exert will be very striking. Besides averting muscular spasm, the incision which I recommend possesses another advantage, which I did not insist upon so much in my first paper as it seems to deserve. While the parts are stretched across the roof of the mouth after the insertion of the stitches, the wound above is made to gape, and in this condition is covered with a layer of lymph, which has the effect of thickening the tissues for the time, and also keeping them more quiet than they would otherwise be. I have such confidence in the accuracy of this view, that I prefer a free incision in the site of the levator palati rather than a short wound little broader than the blade; and I recommend the free incision, too, because many of the fibres of the palato-pharyngeus muscle will be cut, whereby further relaxation will be permitted. The incision may be effected either with a free division of the mucous membrane, or the knife may be plunged through this membrane, and then carried backwards and forwards to effect the division of the tissues within. I have sometimes acted on this latter plan, but in my opinion it is best to make the opening in the mucous membrane as free (or nearly so) as the wound in the muscular tissues. The blood gets readily away, and there is no infiltration of it in the soft tissues, as happens when the membrane is left almost entire. In general I find that if the preliminary division above the palate be made free, and in an especial manner the anterior extremity of the palato-pharyngeus be separated partially or perhaps completely from the posterior border of the hard palate, there is little need for the division of the posterior pillar of the fauces. There is perhaps little or no risk in dividing this part, but after doing so, I have usually noticed that the two sides of the uvula became more œdematous than on other occasions, probably from defective circulation through the veins. In some instances, however, the division of that part of the palato-pharyngeus which forms the posterior pillar of the fauces greatly facilitates the approximation of the sides of the posterior extremity of the fissure, and in all instances when, notwithstanding any incisions that may have already been made above each flap, the muscular action of the part seems still vigorous, I should deem the division of the parts in question of great service.

It has often appeared to me that when the head was thrown far back for the purpose of exposing the palate to a strong light, the flaps have

been drawn towards the posterior nares, and that in the s
when the head was not kept so far back, the parts naturall
the tongue. To account for these circumstances, I an
think that when the head is thrown far back, the axis of
changed, and that its action, instead of being downward
upwards, just as the sterno-mastoid muscles are underst
the head forwards or backwards, according to the angle w
of the skull forms with the top of the spine. Anywise I h
it advantageous during the operation to stretch the head

In cutting so near to the numerous large vessels whi
vicinity, some danger from hæmorrhage might be app
have never yet, however, had the least trouble on this s
always used iced water in my operations, and the bleedi
never amounted to a table-spoonful, has invariably cease
termination of the operation. There might be immine
the knife were carried far back above the palate, but so
limited in its action between the posterior nares and
border of the levator palati, there is no possibility of
large vessel. Further back than this there might be
point passing out at the side of the upper part of the
doing serious mischief.

I still retain the opinion that there is no better mode o
the stitches than by means of a slightly-curved needle, set
The point of the instrument, armed with a smooth rou
thread, is passed from below upwards about a quarter of
the cut margin of the fissure, and made to appear in the
gap, when the thread is seized with forceps, drawn three
out of the mouth, and then the needle is withdrawn. A
œuvre is followed on the opposite side; the two threads
together by the ends which have thus been drawn out a
and, by withdrawing one of them, the other will be carried
aperture opposite to that where it was first introduced.
thread has been double; now one end must be drawn thro
tures and out at the mouth, and so the thread is ready to b
three, four or five threads are introduced in this way, an
the cut margins of the flaps are sponged free of blood an
various threads are fastened.

In my early operations I generally made a simple knot;
ing the thread twice over, made that called the "surgeon'
ance with the advice of Professor Smith of Maryland.
the double turn is to prevent slipping until the completio
If there be no great muscular spasm, there is seldom any
slipping; if there should be, the twist first made must
with the point of the forceps, or else a favourable oppor
the parts are very quiet, must be taken to effect the man
in preference to such plans I have latterly adopted a me
have found to be most satisfactory. A loop is made with
of one end of the thread,[2] the other end is then passed thr

[1] Practical Surgery, 2nd ed. p. 33.
[2] Druitt's Vade Mecum, 4th ed. p. 401; also Medical Times, vol. xvi.

it is drawn so tight as just to permit the thread within it to slip along on the application of moderate traction. The loop can now be slid up to one of the apertures in the palate, and the cut edges being accurately adjusted, the whole can be kept *in situ* by tying a common knot on the thread close upon the loop. By taking care that the thread is very smooth on the surface, and regular in size, and by drawing the loop with proper firmness, slipping will rarely occur. But, indeed, it is one of the advantages attending my mode of operation, that there is less trouble at this part of the proceeding, than when the muscles are left entire in their natural condition.

The degree of tightness to which the stitches may be drawn, has often been a puzzling point with me. It has been remarked, that ulcerations frequently take place in the site of the ligatures; and this has been attributed to their tightness. I have no doubt that this is the cause; but if the pressure do not actually strangulate the parts, I believe that no permanent harm will result. If the edges of the fissure are not kept together with some degree of firmness, there is a risk of saliva, or mucus, getting between and preventing union. On the other hand, if all the threads were drawn so as to endanger strangulation, the whole extent of the margins between the threads might slough. On the whole, a moderate degree of tightness should be preferred, rather than that the edges should be kept asunder by saliva or mucus. I have, too, had difficulty in determining the time to remove the stitches. In some of my early operations they were all taken away about the forty-eighth or fiftieth hour, but latterly I have permitted them to remain longer. I believe that the adhesions are so readily broken on the second or third day, that it is best to permit all, or at any rate the most important ligatures, to remain over those dates, in case of any dangerous force being applied at this important period. It is better, in my opinion, to let the threads remain several days too long, than that they should be moved a minute too early. Usually I take one or two stitches away on the third or fourth day, and on the fifth or sixth remove them all. It is better, I think, to take them out at intervals, than all at once.

With some exceptions, at first, all my patients have had fluid food from the date of the operation until the union has been firm. I believe this to be a great improvement in the treatment of such cases; and have to express my acknowledgments to my friend Sir Philip Crampton[1] for breaking the established rule, previously acted upon, of starving the unhappy patients for eight-and-forty-hours, or more, after the performance of the operation. Sir Philip permitted two of his patients to partake of "boiled bread and milk, custard, soup, and jelly, twice or thrice a day," with the best possible results; and when I contrast the apparent distress of the patients who were formerly starved, with the comparative comfort of those to whom this wholesome mode of enjoyment has been permitted, I have no hesitation in recommending this treatment as of very great service. Besides, the exhibition of soft or fluid food is less hazardous in my own method than in the ordinary operation, as the chances of spasm and consequent

[1] Dublin Journal of Medical Science, 1st July, 1843, vol. xxii.

dragging in the stitches are greatly arrested. Well
what I chiefly recommend, and it may be seasoned wi
or a little wine, as the patient may choose. Usually, i
days the union of parts is so firm that solid food may
and it is seldom that any surgical interference is requ
time.

Patients and their friends are generally most anxious
change of voice and improvement in articulation as soo
permitted. If the whole cleft has been closed by the
improvement in tone is at once perceptible; but if there
ture left, as is often the case, little change can be p
however, the opening be closed by any piece of mechanis
as regards the voice will appear much the same as in the
In some the change is much more apparent than in othe
considerable after-training is required to improve the voic
The original defect has permitted the air to pass as readi
nostrils as by the mouth; hence the nasal sound so ch
such cases, and hence, too, the impossibility of articulatin
and words as get their modulation in the front part of the
natural state of the palate. I have found some of tho
have operated, so very indolent and regardless of impr
they have not taken any pains to learn the use of the pa
by the operation; but in others there has been such sa
gress as to astonish and delight the friends. One of
whose articulation was so bad before the operation that I
understand a word he said, afterwards set himself in
study elocution, and in less than twelvemonths acquir
tery, that his speech was in reality more correct than is
in ordinary society. The power of speech is acquired
imperceptibly in early life, that we hardly appreciate the n
and under the circumstances referred to, we are all perh
guine as to the expected improvement,—forgetting, in
many years that passed in early life ere an ordinary c
obtained over the organs of speech. In most instances I
considerable effort is required on the part of the patient t
benefit of a successful operation.

I have attempted on several occasions to close the f
hard palate, in accordance with the directions of my frie
Warren[1], but as yet without much success. The plan
the soft tissues from the bones, as recommended by t
surgeon, seems in his hands to have been very successf
failures must, I suppose, be attributed to want of skill o
to the circumstance, that the cases in which I have
the practice have not been favourable for its application.
whilst dealing with the soft palate, I have also dissected th
the bone between the margins of the gap and the alveolar
have been enabled to close the whole gap by bringing the
in the mesial line; but almost invariably the junction

[1] New England Quarterly Journal of Med. and Surg. April

given way in a day or two after the stitches have been withdrawn, seemingly in consequence of the contraction induced by the soft structures resuming their original attachment to the bones. Sometimes a small slough has formed in this locality, but I have not perceived that the opening has been larger on this account after the parts had been completely healed; the size of the fissure here being regulated chiefly by the deficiency of the bones.

(To be concluded in next number.)

THE HISTORIES OF TWO CASES OF CEREBRAL APOPLEXY IN CHILDHOOD;

WITH SOME GENERAL AND STATISTICAL OBSERVATIONS ON THE CAUSES OF THE DISEASE, AND THE RELATIVE FREQUENCY OF ITS OCCURRENCE AT DIFFERENT PERIODS OF LIFE.

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THE histories of the two following cases of cerebral apoplexy, occurring in childhood, are offered as a contribution to the records of similar cases. Both of these cases presented well-marked and characteristic symptoms, and, at the same time, striking contrasts, not only in the condition of the patients in whom the attacks occurred, but also in the seat of the hæmorrhagic effusion. One of the subjects was an apparently healthy boy, who was suddenly seized whilst at play; in this case the hæmorrhage was found to be in the substance of the brain. The other was an unhealthy girl, who had long been delicate: here the blood was found effused in the arachnoid cavity. In the first case, hypertrophy of the heart existed, and the hæmorrhage was of the sthenic form; in the other, the patient was suffering from purpura, and the hæmorrhage was of the passive or cachectic kind.

This variety of circumstances has led to a series of reflections, which will be found in the following pages. They include some observations on the causes of apoplexy in general, more particularly in reference to the histories of these two cases. Some remarks on the occurrence of apoplexy at this early age, with references to several similar cases, will be given; and a series of statistical facts, which appear sufficient to prove apoplexy to be a disease of middle life rather than that of advanced age, will be appended.

CASE 1.—*Cerebral Apoplexy in a boy aged nine years, characterized by coma, convulsions, and paralysis. Death in seven hours. Large clot of blood in the right hemisphere of the brain. Hypertrophy of the left ventricle of the heart.*

Thomas Smith, aged nine years, a boy of slight conformation, but who is stated to have enjoyed good health up to the time of the present attack, was brought into University College Hospital in a state of insensibility. On inquiry, I ascertained that, between three and four hours previously, he had been trundling a hoop, when he was seen to stop suddenly, put his hand to his head, and fall to the ground, making

an attempt to grasp the iron railings of a house. He was seen by a surgeon, who recommended his removal to the

On his admission, there was coldness of the general s body, particularly of the feet; his face was pale; his to protruded from the mouth; his breathing slow, occasionally torous; his pulse was small, and varied from 50 to 60 in The right arm and leg were convulsed; the left arm wa not apparently paralysed, as when removed from any posi it happened to be, it resumed the same again; the left lysed, falling flat after being raised up. He was insensible or to loud noises made close to his ear. The pupil of was widely dilated, that of the left much contracted; ar equally unaffected by a lighted candle. No external ma were found on shaving the head. The treatment consis lotion to the head, warmth to the feet and trunk, and enema. He died, with very little change in the sympt hours after his admission, and about seven hours after the

Post-Mortem Appearances.—The scalp and skull wer from any appearance of injury, and the membranes of th healthy; but there was great congestion of the veins and s dura mater. The cerebral substance of the left hemisphe to be particularly pale throughout. On slicing the right a large clot of blood (about three ounces) and a quantity of found. This coagulum, which extended longitudinally and three inches, was placed externally to the right late and passed downwards to the corpus striatum, but did not with the ventricle. The cerebral substance surrounding t was not softened. On washing away the clot, the open e several blood-vessels were seen. One in particular, lar rest, was traced through the corpus striatum, and was beli been the principal source of the hæmorrhage. The lung congested. The heart was enlarged, weighing, when well tween five and six ounces. The left ventricle was much hy The aortic valves were stiff, like parchment; but, on bein water poured on them through the aorta, they were fou competent for their function. The abdominal viscera w with the exception of venous congestion of the liver, spleen,

Remarks.—In examining the details of this case, we characteristic symptoms of an apoplectic seizure, in a chi with those which occur in the adult. There existed the attack, arrest of volition and sensation, collapse, convulsi action of the pupils, slowness of pulse and respiration, ste post-mortem examination, revealing extensive hæmorrhage completes the history.

On inquiring into the origin of this sudden and fatal young and apparently healthy a subject, and on looking ov the generally assigned causes of the disease, hypertrophy ventricle of the heart meets our view. It was present, as v in this case; and was, in all probability, under the excite play in which the boy was engaged, the immediate cause of rhagic effusion. The relation between apoplexy and diseases

has long been a source of difference of opinion among pathologists; some asserting that the association between the two is intimate; others, with equal force, denying any relation between them, save coincidence. Lancisi, Baglivi, and Portal, seem to have been the first observers who believed hypertrophy of the left ventricle, or other disease of the heart, to be closely associated with apoplexy in the relation of cause and effect. Malpighi, and, at a later period, Cabanis, died of apoplexy, while labouring under hypertrophy of the heart. The deaths of these distinguished men recalled on each occasion attention to the subject; and the close relation of the two affections has since been received by many as established. Amongst the advocates of this opinion we find Legallois, Corvisart, Richerand, Lallemand, Bricheteau, Andral, Cruveilhier, Boilleau, Adams, Hope, and lastly, Burrows, who has with great ability investigated the true conditions of the cerebral circulation, and removed a mass of error by which the subject was oppressed.[1] He has shewn a very close relation between apoplexy and disease of the heart, having ascertained their coexistence in three-fifths of a number of cases, partly his own, and partly from other sources. In fifty-nine cases of apoplexy he found, in reference to the nature of the disease of the heart present, that in nineteen there existed hypertrophy with valvular disease, in ten simple hypertrophy, in eight valvular disease alone, and in one, simple dilatation—being thirty-eight cases of heart disease in fifty-nine cases of apoplexy. This association, as already stated, has been denied by many persons; in this country by Drs. Kellie and Abercrombie: and in France, by M. Rochoux and others. The latter has stated, that in taking two series of cases, the one consisting of persons who have died of apoplexy, the other of those who have died from other and different causes, he finds the proportion of heart disease to be rather less in the one series (apoplexy), than in the other; consequently that the relation between apoplexy and disease of the heart is a mere coincidence. For example, he found that in thirty persons who died from various acute diseases, the heart was hypertrophied in twenty-six. In thirty persons of about the same age, who died from apoplexy, he found the heart enlarged in only twenty-four. Louis, without expressing any opinion on the subject, states that in forty-five cases of hypertrophy, he did not meet with a case of apoplexy. Other observers, admitting the influence of hypertrophy, believe that there are several equally powerful influences which cooperate in the production of apoplexy. Thus Dr. Williams includes as a cause, disease of the heart, when coincident, as it often is, with disease of the kidneys. Dr. Watson believes that the left side of the heart is rarely diseased without the right side participating in the affection; hence arises an obstruction to the venous circulation, and an accumulation of blood in the brain. When the vessels are diseased at the same time, rupture is the consequence. It is right to state that Dr. Burrows takes all these conditions into consideration when assigning the chief place to the influence of hypertrophy of the left ventricle, by the action of which an augmented quantity of blood is sent with increased force into the vessels of the brain. The present case seems strongly to corroborate this opinion.

A careful consideration, however, of all the views which have been

[1] On Disorders of the Cerebral Circulation. London, 1848.

expressed on this subject, leads me to conclude that thou of the left ventricle in a state of hypertrophy may, in th and perhaps *per se* in some cases, conduce to the causati hæmorrhage, there are many not less efficient causes wh to the same result. Among these may be mentioned, on plethora, with excess of blood in the system; on the ot nutrition, atony and weakness of the walls of the blood perhaps a diseased state of blood, as in Bright's disease also atheromatous disease of the vessels, and softening venous congestion from disease of the lungs, as emphy as from dilatation of the right side of the heart; from t tumours, and from many other causes. Several of the mischief often coexist; and in connection with any of the or increased action of the left ventricle, though health powerful cooperating agent. Thus, if venous congestion any of the causes named, and the left ventricle is actively e same time in pressing the blood forward through the arte is necessarily subjected to an increased pressure; coma and if death follows, we find all the vessels gorged with b *tive apoplexy.* If one or several of the congested vess hæmorrhage occurs, and we find *hæmorrhagic apoplexy.* accumulated as the result of venous congestion, or from an it will offer an obstruction to the free flow of blood; the subjected to the pressure of the heart's action, and deat result. We here find not an excess of blood, though it agent through which in reality the fatal pressure has been an excess of serum—*serous apoplexy.*[1] Any of these operate individually: thus in this child the action of the sufficed to cause hæmorrhage from vessels, which were, so f ascertained, perfectly healthy; whilst, on the other hand, deposits in the arteries of aged persons are sufficient to p ture of their coats, independently of any morbid action of

CASE II.—*Meningeal Apoplexy in an unhealthy child a and seven months. Insensibility and convulsions. Death Large coagulum in the cavity of the arachnoid. Purpur —Disease of the kidneys.*

Mary Ann May, aged two years and seven months, had b baby until she was four months old. Her parents were one of her sisters, when 2½ years old, "had a fit"; on rec which, her left arm was paralysed. She gradually recove this arm, but now, in her sixth year, has frequent epile When the subject of the present case was four months ol was compelled to wean her, and she has since then be child, and has neither been able to walk or speak. Her poor and deficient. She has suffered much in dentitio

[1] When the serum contained in the arachnoid, the cerebro-spinal fluid, as in its normal proportions, it can pass with facility into the vertebral ca contents of the skull can adapt themselves to the capacity of the space wh But when the fluid is in excess, or when it is infiltrated beneath the pia mat cannot take place, and an injurious pressure is the result of any increase blood sent to the head.

time of her death, was cutting one of her eye-teeth. Her mother had for five or six months observed that her feet were swollen, and that in cold weather they became remarkably cold and livid. The child has had a good appetite, and has slept well. Her bowels have been in general relaxed; she frequently cried as if in pain when making water. She has not been known to indicate any pain or suffering in the head. Being unable to walk, she generally lay or sat on the floor, and was so weak, that the gown of her mother brushing past was sufficient to throw her down. Her mother recollects that she had one or two severe falls, but none within the last six months. The marks of bruises which appeared on her body were subsequently attributed by the mother to slight falls, or to the child being pinched or pulled about by some of the other children. She had never taken particular notice of them.

It appears that her appetite had been bad for the two days preceding her death; and that, at about half-past three o'clock on the day of its occurrence, one of her sisters, who was holding her, noticed a jerking or catching of the jaw, that she was about to fall, and that she suddenly went into a fit and became insensible. Her body became rigid, her hands clenched, her jaws fixed, and she foamed at the mouth. This fit lasted a quarter of an hour. She got better for a few minutes, when another fit came on, lasting as long as the first; there was a similar appearance of relief, and a third fit, shorter in duration, succeeded. Some domestic remedies were applied; the child seemed better, and swallowed a little tea, went to sleep, and awoke about half-past seven, when she had another fit and died immediately. An order had been procured for one of the parish surgeons, but not in sufficient time to enable him to see her during life.

Post-Mortem Appearances.—I was not present at the opening of the body, but subsequently examined it and the different organs. The following description of the morbid appearances is founded on this examination, and on notes kindly given me by my friend, Mr. Greenhalgh, who was present at the previous inspection.

The body was emaciated; the feet and legs were œdematous, and numerous small spots of purpura were visible, particularly on the legs. There also appeared to be ten or twelve bruises on the scalp, face, arms, and legs; but they were mere brownish discolourations, arising from slight extravasation of blood under the skin, extending also, in some of the spots, into the subcutaneous cellular tissue. There was no external abrasion, nor any swelling. Each of the clavicles presented a remarkable bend at right angles to its length, on its own plane; and one of these bones had the appearance of having been, at some antecedent period, partially fractured. In the cavity of the arachnoid, particularly over the anterior portion of the right hemisphere, there was a coagulum of blood: there was also effusion of blood beneath the arachnoid, in the pia mater. These effusions, which extended to the left side, and also to the base of the brain, were supposed to amount in all to at least four ounces. The lungs and heart appeared healthy; the latter contained no blood. The liver was enlarged, remarkably pale, soft, and mottled. The kidneys were enlarged, very soft and pale, and evidently diseased. There were some elevated, and apparently ulcerated, patches in the large intestine; the mesenteric glands were enlarged.

Remarks.—The history of this case closely correspo
some others, to be referred to presently. The attack
ill-nourished, unhealthy child, and was the result of a
blood (as shewn by the presence of purpura). The
cases, participating in the general impairment of nutr
tonicity, admit readily of congestion and rupture, and giv
present instance, to the form of apoplectic effusion, kn
cachectic, or *passive* hæmorrhage. This case contrast
preceding one, in which the powerfully-contracting left
heart gave rise to hæmorrhage in an otherwise healthy

The appearance of bruises on the body of this chil
medico-legal investigation, which compromised the li
might have been, the lives—of its mother and aunt. On
gentlemen who examined the body, having been info
persons that the relatives had treated the child badly, c
clusion, on seeing the bruises and the bent clavicles, th
was the result of direct violence, and that it could not
duced even by a fall. On this evidence the mother and
to prison by the magistrate. On subsequently examinin
direction of the coroner, and seeing the anasarca, purpur
kidneys, I concluded that the bruises (which, though n
slight), did not indicate the application of violence—(in on
cases, subsequently quoted, the knot of a night-cap suff
similar appearance); and that the hæmorrhage, thoug
have contributed to its production, was, in all probabilit
natural causes. In this opinion the jury coincided.
shewn in evidence, that the child had been kindly treate
persons who reported to the contrary had been at en
family. After a week's detention, and much consequent
ing, the relatives were again brought before the magis
charged. The chief arguments used, independently of th
described, in support of the notion of external violence, w
apoplexy did not occur at this early age without some spec
as a violent blow—(the cases quoted in another part of th
tion will shew such an opinion to be quite untenable); a
the hæmorrhage had been the result of purpura, the bl
have been coagulated. That this, too, is a mistaken opi
shewn by Dr. Williams,[1] and very recently by Dr Park
the fact has been long familiar to myself and others, tha
not prevented from coagulating by the existence of purpu

THE RELATIVE FREQUENCY OF CEREBRAL APOPLEXY AT DI

Passing from these special points in the history and
these interesting cases, it will be useful to view them c
reference to the early age at which the fatal lesions occ
consider their relation, in this respect, to similar cases
three phases or periods of life marked by such wide distinc

[1] Principles of Medicine, 2nd edit. [2] Medical Gazette, N

attributes and relations, that it will be useful to place our remarks under heads thus respectively indicated. They are:—

I. That of the infant at, or immediately after, birth.

II. That which extends from a few hours after birth to the age of 20, —that of full puberty or adolescence.

III. From the age of 20 to extreme old age or decrepitude.

No difference of opinion can exist, that it is this latter period or division of life, which will include the great majority of the cases of apoplexy which occur; but considerable doubt, and some errors, exist as to the periods of this lengthened interval, during which the predisposition to apoplexy is strongest. Some carefully-observed facts will, I hope, throw light on this subject, and afford an interesting and striking result. I shall first briefly consider the occurrence of apoplexy in early life, illustrating the remarks on the second period by reference to several cases. It is a remarkable fact,—rendered still more so by the observations which will presently be made,—that many writers, with extended means of observation, have not met with, or at least have not recorded, any cases of apoplexy before twenty years of age. We need not go further for an illustration than to the table of cases collected by Dr. Burrows[1] from his case books, and from the writings of others, amounting to 215 cases, and in all of which the individuals were over 20. It is probable (certain, in Dr. Abercrombie's cases, here included) that some few examples of the disease, occurring anterior to the twentieth year, have been omitted; yet sufficient evidence remains to show, at least, that such cases are considered very rare. Rochoux, indeed, goes further than this, and states his doubts as to the occurrence of true apoplexy before the age of puberty.[2] I have referred to the reports of the Registrar-General for information on this point; and find the following results of an examination of the tables of mortality for fifty-two weeks, ending the first week of November 1848.

Ages of persons returned as having died of apoplexy in fifty-two successive weeks of the years 1847-48.

Age	0 to 15.	15 to 60.	60 and upwards	
Number	134	495	572	Total 1201.[3]

This return cannot, of course, be received as perfectly correct, the cause of death being too often returned without sufficient evidence of its accuracy; yet there must still be a large number of cases under the assigned age. The number 135 probably includes many infants who died at birth. These are the cases comprised in our first division, to which I shall now briefly allude.

1. HÆMORRHAGIC EFFUSION, OR APOPLEXY, IN INFANTS AT BIRTH.—In a very large proportion of the children who die during birth, or immediately afterwards, in a state resembling asphyxia, if the head be examined, blood will be found effused in the cavity of the arachnoid, and beneath this membrane. Such cases have been described by several writers on the diseases of children, including Barthez and Rilliet, Dr. West and Dr. Kennedy,—the latter of whom has recorded a number of

[1] Op. cit. p. 130. [2] Dictionnaire de Médecine.

[3] This number gives the proportion of about one case to 1782 persons actually living in the metropolis.

such cases in the *Dublin Journal*.[1] The locality of the
given rise to the designation, *meningeal apoplexy*; th
accompanied by apoplexy of the cerebral substance in
apoplexy. The peculiar circumstances, however, in wh
placed during birth, the compression to which the skull
change of shape which it undergoes, the impediment to
frequently occurs, as well as the succeeding events (inc
position, the altered circumstances of the functions, not
and lungs, but also of the skin, mucous membranes, and
tissues), become predisposing and exciting causes of cer
and effusions much more frequently at this early perio
the second period. These peculiarities place so broad a
tion between this class of cases, and those to which o
particularly belongs, that it will be unnecessary to m
sion to them.

II. HÆMORRHAGIC EFFUSION, OR APOPLEXY, OCCUR
PERIOD OF BIRTH TO THAT OF PUBERTY.—When we con
tion of the brain, and its circulation, in the adult, with
or young subject, we can have little difficulty in arrivi
sion, that apoplexy will be less likely to occur in the o
the other. A brief reference to the causes of the dise
tioned in this paper, will suffice. In early life we fi
resisting, and the blood-vessels more elastic and yiel
adult,—where the one becomes dense and rigid, and
quently the seat of deposit or degeneration. In the y
energies of the system are directed to nutrition and
adult, the chief call is on the brain and nervous system
to bear the wear and tear of life. The heart, in the
becomes larger and more powerful, it is subjected t
ment, and becomes oftener the seat of disease,—all
the circulation through the brain. These, and other
wide difference in the comparative frequency of apop
the second and third periods of life. There is, howeve
tion on which apoplectic effusion sometimes depends: v
diseased blood escapes from equally diseased blood-ve
described in the remarks on the second of the two pre
allude to purpura hæmorrhagica and analogous condit
function of nutrition, active in childhood, is interfered
the form of apoplexy resulting is of the asthenic or
ter. This form of apoplexy is found to occur more fr
dren than in adults,—a fact set forth in other parts
essay. The number of cases of cerebral hæmorrhag
occurring between birth and puberty, which I have
different sources, amounts to twenty-three, making
two preceding cases, twenty five. Of these, however,
cases of hæmorrhage without coma, and in another
toms were not very characteristic. This will reduce
twenty-one,—quite sufficient to form the basis of fut
I have thought it desirable rather to give a short outli

[1] March 1837.

than to mention merely the age, and I have divided the cases into two classes: one, in which the hæmorrhage occupied the substance of the brain itself (fourteen cases); the other, in which blood was effused into the membranes (nine cases). The latter or meningeal form of the disease is generally believed to be the most frequent in children; though, on the present occasion, it will be found in the minority,—a fact which will be partially explained by my having placed, in the first class, three cases of which the *post mortem* appearances are not given: viz., a case by Dr. Kennedy, one by Andral, and another by Serres, and which might have belonged to the meningeal form.

A. CASES OF CEREBRAL APOPLEXY—HEMORRHAGE IN THE SUBSTANCE OF THE BRAIN.

1. An infant, three days old, apparently quite healthy, presented the ordinary symptoms of well marked apoplexy, and died suddenly. After death a clot of blood was found in the substance of the left hemisphere of the brain, immediately outside the corpus striatum. The tissue was "a little softened around it."[1]

2. An infant, five days old, presented characteristic symptoms of apoplexy, and died suddenly. A *post-mortem* examination was not permitted.[2]

3. A little girl, eleven months old, had suffered from head symptoms for a considerable time. She had an attack of extreme faintness forty-eight hours before death. After death several apoplectic clots were found in the brain, with much venous congestion. There was thickening and obliteration of several of the veins, the result of previous inflammation.[3]

4. A girl, two years old, had measles, and subsequently suffered from general illness. She was seized with convulsions, and the right leg became paralysed; the left pupil was contracted. Death occurred in a few hours after she came under observation. After death, a quantity of blood was found in the optic thalamus and corpus striatum, but on which side is not stated.[4]

5. A case (subject three years old) recorded by Lallemand[5] is very similar to that of Dr. West, already referred to.

6. M. Serres states that he has seen apoplexy in a child three years old. I have been unable to find the particulars in his essay.[6]

7. A child, five years old, laboured under an apoplectic torpor rather than coma, and died in a state of great prostration. After death there were found "capillary apoplexy and a clot of blood."[7]

8. The same authors record the case of a delicate girl, aged seven, who died after having suffered head symptoms for several days. After death, a clot of blood was found in the left optic thalamus.[8]

9. Mr. Worthington refers to Dr. Abercrombie as recording the case of a child, aged 9, in which both lateral ventricles contained clots of blood; that in the right ventricle being of the size of a large walnut. The

[1] Billard, "Traité des Maladies des Enfans," p. 600.
[2] Kennedy, "Dublin Journal of Medical Science," January 1837.
[3] West, "Lectures on Diseases of Infancy," etc. Lect. 4.
[4] Barthez et Rilliet, "Maladies des Enfans," tom. ii. p. 65.
[5] Récherches Anat. Path. sur l'encephale. Lettre 3ieme. [6] Annuaire des Hôpitaux, p. 284.
[7] Barthez et Rilliet, Op. cit. tom ii, p. 54. [8] Op. cit. p. 58.

symptoms, and the state of the substance of the brain given. I have been unable to find the original case.[1]

10. Barthez and Rilliet refer to a case in the *Edi and Surgical Journal*, in which, without any disease of of blood were found in both lateral ventricles, and at subject was a boy, aged nine. The symptoms precedi headache, convulsions, constant movements of one si contraction of the fingers, followed by relief: on the profound coma, and death in a few hours.[2]

11. A girl, when young, had suffered from necrosis o the bones of one of her feet. Her health became re-esta continued well for some time, until head symptoms can convulsions of the right side, succeeded by paralysis of this she was relieved, as also from a subsequent attack racter; but died after an attack of coma, of eighteen ho her eleventh year. After death there was found a clot than a hen's egg, external to the right ventricle. Th tened. Blood was also found in the subarachnoid spa face of the right hemisphere.[3]

12. A boy of the same age, in good health, was fou his breakfast in a state of insensibility and collapse, breathing, convulsions, the right pupil dilated, and the He died in about twelve hours from the commencer After death, a large clot of blood was discovered in the and adjoining portion of the brain. In other respects, healthy. His stomach and intestines contained a large undigested turnips.[4]

13. A case is referred to by Andral, in a child twel The history is not narrated. He alludes to Guersent, similar cases.[5]

14. A boy, fourteen years of age, had been destit winter. In a state of great debility in the spring, he headache, restlessness, general feverishness, and slight the following day he was brought to the hospital, in a bility, and died in an hour afterwards. A clot of blo the posterior portion of the right hemisphere.[6]

It is unnecessary to extend this epitome of cases by re which are recorded as having occurred between the ages twenty, such cases are not very unusual. Several may Copeman's collection of cases of apoplexy.[7]

B. HÆMORRHAGE IN THE MEMBRANES OF THE

Serres appears to have first distinguished apoplec the substance of the brain from those in which the effu tained in or beneath one of the membranes envelopi

[1] Provincial Medical and Surgical Journal. New series. Vol. iii.
[2] Op. cit. p. 56. [3] West, O
[4] Mr. Worthington in "Provincial Journal," new series, vol. iii, p. 18
[5] Pathological Anatomy, vol. ii, p. 723.
[6] Guibert, "Archives Générales, 1827," and Barthez and Rilliet, Op. c
[7] A Collection of Cases of Apoplexy, by Edward Copeman, surgeon.
[8] Annuaire des Hôpitaux, 1819.

He attributed much importance to this distinction, believing that the lesion of the cerebral substance was always accompanied by palsy, whilst that confined to the membranes did not produce this result. On this distinction he founded a diagnosis as to the seat of the extravasation. He shewed also that meningeal apoplexy occurs chiefly in children under fifteen years of age, and in men above sixty.[1] He found that it occurred more frequently in women, and at a much earlier age than that just mentioned. In forty-one cases there were thirty-three females and only eight males.[2] It is almost invariably this form of apoplectic effusion which occurs in infants during birth, as already stated, and also in those children who are rendered cachectic by bad nursing, bad air, and bad food. These latter are the cases which are described by Barthez and Rilliet, Dr. West, and others, under the name of *cachectic, or passive hæmorrhage*. The following are examples of the meningeal form of apoplexy in children.

15. A male infant had suffered from drowsiness, sickness, and slight jaundice when a fortnight old. When five weeks old, he was seized with hurried respiration, great depression, and convulsions, during which he screamed aloud. Spots of purpura appeared on various parts of the body, and a dark mark under the chin, where the knot of the night-cap pressed. The fits recurred frequently, and he died in a state of exhaustion sixty hours after the first fit. After death, there was found to be much congestion of the sinuses of the skull, with large coagula over both hemispheres in the cavity of the arachnoid. The body was generally anæmic; the heart was healthy.[3]

16. A girl thirteen months old (in the practice of Drs. Lombard and Panchaud, of Geneva), after recovery from bronchitis, was seized with an attack of convulsions, which ceased, and she slept for a short time. The convulsions reappeared, and the child died suddenly in nineteen hours from the first attack. Hæmorrhage was found to have occurred beneath the arachnoid, in the pia mater, over both hemispheres of the brain. There was slight softening of some portions of the cerebral substance, and a tendency to hæmorrhage in points.

17. A boy, two years old, had convulsions during five weeks antecedent to his death. They became more frequent, he complained of his head, and bled much from the nose. After death, a large clot of blood, which had evidently been some time effused, was found in the cavity of the arachnoid.

18. A boy, two years and a half old, had suffered from some obscure illness for several months. There were many purpuric spots on the body. The immediate cause of death was lobular pneumonia: there were no cerebral symptoms. Clots were found over both hemispheres in the arachnoid cavity.

19. A girl, two years and a half old, had been delicate from the age of six months, in consequence of difficult dentition. On the day preceding her death, she exhibited signs of a convulsive attack, which became more marked, and she died. After death, a clot of blood was found in the cavity of the arachnoid.[4]

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[1] See also a Memoir, with a number of cases which occurred in old men, by Prus, in Mém. de l'Acad. de Médecine, vol. xi.

[2] Op. cit. p. 284.

[3] West, Loc. cit.

[4] These four cases are recorded by Barthez and Rilliet, Op. cit.

20. A child, two years and a half old, of scrofulo badly nourished, had disorder of the abdominal viscera of abdominal irritation. The child's mother was severe by its face becoming livid, and by its gasping for brea which generally lasted one or two minutes. It died After death, the vessels of the brain were found conges been poured out in considerable quantity on the surfac substance was healthy. The heart was small, the lun the liver and kidneys were enlarged.[1]

21. A boy, three years old, had suffered from the s and five months from passing blood by vomiting and s was bad; and when three years old, he was puny and c he was in a state of exhaustion from diarrhœa, coma c died in twenty-four hours. After death, a large coagu to six ounces, was found on the surface of the right he small clot in the substance.[2]

22. A girl, twelve years of age, having suffered fro illness for several days, was suddenly seized with loss and her left side was paralysed. Her consciousness w she regained some power in the side; but she became g and died in fifteen weeks from the date of the attack. remains of an old clot of blood were found over the ri the substance of which was also slightly softened.

23. A girl, fourteen years old, had induration of scrofulous glands. She died without any cerebral sy death, a clot of blood was found in the cavity of the ara anterior portion of the right hemisphere of the brain.[3]

It would be interesting to enter at greater length ries of the preceding cases, but it is not possible to occasion. The facts, thus briefly set forth, exhibit a the symptoms, and shew that in many respects they re very different cerebral lesions. The observation o Barthez and Rilliet to remark that they believed cereb was often confounded with other diseases, and that this its frequency and importance to be overlooked. The serve that there was considerable effusion of blood, wit toms, in three cases. Such cases are not strictly apopl felt that their mention could not be uninstructive.

In reference to the seat and frequency of cerebral children, the authors just named say, that in their ow have met with seventeen cases of meningeal, and ei hæmorrhage. From these sources, and from the ca others, they have drawn up the annexed table,[4] shewi and seat of hœmorrhage in thirty-eight cases of apop under fourteen years of age.

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[1] Mr. Greenhow, "London Medical and Physical Journal," vol. xlvii

[2] Dr. West, Op. cit.

[3] Both the latter cases are from Barthez and Rilliet. Op. cit.

MENINGEAL HEMORRHAGE.

Years.	Cases.	Males.	Females.
1 and 1½	4	1	3
2 and 2½	8	6	2
4	3	0	3
5 to 7	4	4	0
11 to 14	4	1	3
Total,	23	12	11

CEREBRAL AND VENTRICULAR HEMORRHAGE.

Years.	Cases.	Males.	Females.
2	2	1	1
3	2	2	0
4 and 5	3	0	3
7	2	2	0
9 and 10	3	3	0
12 to 14	3	1	2
Total,	15	9	6

The preceding facts will show that the earlier periods of life are not as exempt from these lesions as has been generally supposed; and they will serve as a nucleus for future observations. Their present number, however, is not sufficient to justify any conclusion as to the precise age, in children, most liable to apoplexy.

C. RELATIVE FREQUENCY OF CEREBRAL APOPLEXY AT DIFFERENT PERIODS OF LIFE SUBSEQUENT TO THE AGE OF PUBERTY.

In this portion of our inquiry I propose to avail myself of the statistics of forty-nine cases of apoplexy which came under my notice during the time (above five years) that I was house-physician at University College Hospital.[1] The age was ascertained as accurately as possible in every case; and in every instance there was either a post-mortem examination, or a fit in which insensibility, followed by paralysis, occurred, which justified the case being considered as one of apoplexy. The record has this peculiarity, that the date of the first fit (if there has been more than one) is that which has been retained. The conclusions thence derived are therefore necessarily as to the *period of life most liable to apoplectic seizures*, and not as to *the age at which death by apoplexy occurs*. I believe this to be a distinction of some importance; for, as it must be always a matter of doubt whether a fit will be fatal or not, our inquiries should tend to illustrate the date of its probable occurrence rather than that of its probable fatality. It is this date (that of the probability of the apoplectic seizure) which is of importance in our prophylactic, as well as in all other, considerations.

Table 1 shews, that of the forty-nine cases, twenty-seven occurred in males and twenty-two in females. The relative frequency of the disease in the sexes, thus shewn, corresponds with the generally-received opinion, that apoplexy more frequently attacks males than females. As the number of females living is greater than that of males, the difference is in reality somewhat greater in favour of the latter. The entire number of cases of every description received into the wards of the hospital cotemporaneously with those of apoplexy, just referred to, amounted to 3655; of these, 1834 were males, and 1831 females. When we thus take all diseases, and find the proportion of the sexes nearly identical, we may safely conclude that the disproportion shewn in the cases of apoplexy is not due to any accidental or special disturbing causes, but that the liability to the disease is in reality greater in males than in females.

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[1] I have pleasure in acknowledging the assistance of my friend Mr. Wilkes (late physician's assistant at the hospital) in preparing the table of ages.

This table shews also in other respects a marked dist connected with the influence of sex. The age of the attacked, of these twenty-seven cases, was sixty-two years; youngest, twenty-two. The oldest female was aged seve youngest thirty. Hence, so far as the number of facts ju clusion, *the disease occurs earlier in life in men than in* further, *the liability to attacks ceases in the like order.* Th of progression, as shewn in the table, seems to support th of the facts being sufficient to justify the conclusion. T was, of males, 34.19 years, of females, 50.9.

The Table numbered II, shews the frequency of attacks d nial periods of life, from twenty to eighty.[1] From it we l *greatest number of cases of apoplexy occurs in males betwee* 40 *and* 50; *in females, between those of* 50 *and* 60, in th of ten to seven. The former fall beneath the pressing infl at this period of life surround them, whether these infl their origin from the incessant demands made on the fun vascular and cerebro-spinal systems, or from the irregulari the digestive and secerning systems are too often then su females we observe the frequency of the disease increase aft when menstruation has for some time ceased. This result consistent with that which might have been *à priori* antici feminine attributes, however, become less marked at this many women then evince and put into operation mental powers which had previously been undeveloped. Can su have aught to do with the result before us?

This table shews further a reduced scale of the population sexes, according to the census of 1841, arranged in decen When we compare the relation between the number of apo in each period and the number of persons living, we get th rate estimate which can possibly be had, of the relative freq disease. On doing so, we find that relation to be (without refe as 1 to 66 between the ages of 20 and 30,[2] omitting fracti between 30 and 40; 1 to 16 between 40 and 50; *and* 1 *t* 50 *and* 60, *at which point the disease reaches its acme of fr then again diminishes;* being 1 to 18 between 60 and 70; between 70 and 80. After 80 no case came under observ a singular fact that in 35 cases Bricheteau did not find o years of age. The steady uniformity of these numbers in th and again in the descending scale, seems to confirm the their being an accurate representation of the real state of the will be found, on referring to the Tables III and IV, of cases other observers, that this uniformity does not there exist.

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[1] It will be seen that I have not included the two cases in young subje histories have been given here. I have strictly confined myself to the regul the medical wards of the hospital, and have avoided the introduction of sources of observation. I might have added several, but they would inter believe fairly represents the actual amount of disease in a given district of con

[2] It is hoped it will be understood that the relation is shewn to a reduced tion, and not to the numbers *actually* living in the metropolis. It has been sta there is about 1 death by apoplexy for every 1800 persons of all ages living.

approach to it is in the cases observed by Dr. Burrows; the others ascend and descend with great irregularity. It is also a remarkable fact, that, with one exception, the proportion in my cases finds, in each period, a nearly similar proportion in the same period of one of the other observers, though each may differ from the rest. For example, I find the proportion of cases to the population at the period between 20 and 30 to be as 1 to 66; Mr. Copeman as 1 to 53; Dr. Burrow's collected cases 1 to 80; his own cases 1 to 135; and M. Rochoux 1 to 285. Again, between 50 and 60, I find it as 1 to 10; Dr. Burrows 1 to 10; Mr. Copeman 1 to 20. Additional confirmation of the correctness of my figures may be derived, as already stated, from comparing the proportions which I have found with those of some one of the other observers; thus, 1st, 1 to 66 between 20 and 30 years of age is between 1 to 53 of Mr. Copeman and 1 to 80 of Dr. Burrows; 2ndly, 1 to 25 between 1 to 22 of Dr. Burrows and 1 to 38 of Mr. Copeman; 3rdly, 1 to 16 is not far removed from 1 to 18 of Dr. Burrows; 4thly, 1 to 10 corresponds with 1 to 10 of Dr. Burrows (fractions being omitted); 5thly, the 1 to 18 between 60 and 70 finds its nearest approach in the 1 to 10 by Mr. Copeman; 6thly, 1 to 16 between 70 and 80 finds a relation in Dr. Burrow's cases of 1 to 21, while that of M. Rochoux is as high as 1 to 3. Thus the facts collected by these observers seem to give strength to the results which are here developed, viz., *that apoplexy is not, as many suppose, chiefly a disease of old age; neither does it uniformly increase in the frequency of its occurrence as life advances, but that the liability to its attacks, considerable between* 30 *and* 40, *is greatest between the ages of* 40 *and* 60—a conclusion which is exactly in the words of Hippocrates, and which is, I believe, as near an approach to accuracy as the proof of it is an interesting fact. The opinion to the contrary (that apoplexy is a disease of advanced old age), is in a great measure due to the records put forward by Rochoux, whose cases were derived from the wards of the Bicêtre—an hospital for aged men. Hence the value of a series of cases collected like those here presented, in which there has been nothing particular or special to cause them to be recorded or remembered, but which, so far as they go, represent the ordinary types of the disease. I believe, then, it may be safely concluded, that the liability to apoplexy, which is greatest between 40 and 50 in the male sex, and between 50 and 60 in the female, diminishes gradually after the last-named age in each sex. The source of error, as in Rochoux's case, by which apoplexy is shewn to be a disease of extreme old age, has been already indicated; but there is another and still greater source of error. Very many sudden deaths are attributed to apoplexy without reference to the state of the heart. Morgagni was accustomed to decapitate persons supposed to have died of apoplexy, for the purpose of removing the parts for demonstration, without any reference to the state of the other organs. I hope to be able to shew, on a future occasion, that many sudden deaths in advanced life are connected with a morbid condition of the heart's tissue. The length to which this communication has already extended, prevents any further allusion to this affection at the present time.

[TABLES.

TABLE I. Showing the number of cases of apoplexy obser
maximum, minimum, and mean ages of the indivi
guishing the sexes.

Sex.	Totals.	Max. ages.	Min. ages.	M
Males	27	62	22	
Females.	22	75	30	

TABLE II. Showing the number of cases observed in ea
period from twenty to eighty years, distinguishing th
a reduced scale of the numbers of the population livi
these periods, and the proportion of the cases to
population.[1]

Age.	Males.	Females.	Total.	Reduced scale of population.	Propo to p
20 to 30	5	1	6	400	1
30 to 40	6	6	12	300	1
40 to 50	10	3	13	210	1
50 to 60	5	7	12	125	1
60 to 70	1	3	4	75	1
70 to 80	0	2	2	32	1

TABLE III. Showing the number of cases of apoplexy from
different authors, arranged according to the ages in decen

	Under 20	20 to 30	30 to 40	40 to 50	50 to 60	60 to 70	70 to 80	up
Dr. Burrows[2]	0	2	9	6	8	7	1	
Dr. Burrows[3]	0	12	13	27	23	24	17	
Mr. Copeman[4]	20	30	31	31	25	30	25	
M. Rochoux[5]	0	2	10	7	13	24	12	
Dr. R. Quain	0	6	12	13	12	4	2	
Total	20	52	75	84	81	89	57	

TABLE IV. Showing the proportions of the preceding cases
of population living in each decennial period.[6]

	20 to 30	30 to 40	40 to 50	50 to 60	60 to 70	70 to
Dr. Burrows	1 to 135	1 to 22	1 to 23 2	1 to 10.3	1 to 7.1	1 to 2
Dr. Burrows (collected cases)	1 to 80.6	1 to 49.9	1 to 18.2	1 to 13.1	1 to 7.2	1 to 4
Mr. Copeman	1 to 53.1	1 to 38.3	1 to 27.3	1 to 20.3	1 to 10	1 to 5.
M. Rochoux	1 to 285.1	1 to 42	1 to 42 6	1 to 13.9	1 to 4.9	1 to 3.
Dr. R. Quain	1 to 66 4	1 to 25	1 to 16.2	1 to 10.5	1 to 18.3	1 to 1

[1] This and the two following tables are not intended to be fractionally corr
[2] On Disorders of the Cerebral Circulation. London, 1846.
[3] Collected from Abercrombie, Andral, Bright, and Hope.
[4] A Collection of Cases of Apoplexy, by Edward Copeman, surgeon. Lond
[5] Dictionnaire de Médecine.
[6] The scale is of course proportioned to the whole number of cases refer
writer.

23, Harley Street, London, November 1848.

CONTRIBUTIONS TO THE PATHOLOGY AND TREATMENT OF TROPICAL FEVERS.

By JAMES BIRD, A.M., M.D., formerly Surgeon of the European General Hospital at Bombay, and late Physician General, Bombay Army.

INTRODUCTORY REMARKS.

FEVER forms so important a class of admissions into our Indian hospitals,—presents such variety of symptoms, according to season and locality,—and so frequently proves disastrously fatal to our European regiments soon after arriving in the tropics, that it is of importance to discriminate, among a crowd of symptoms, those essential to the disease, as it is greatly modified by circumstances. A long experience among European troops in different stations of the Bombay presidency, and the medical charge, for nearly five years, of the European General Hospital at Bombay, having enabled me to collect many important facts relative to febrile disease, I am induced to bring these before the profession, in the hope they may be useful in guiding the inexperienced tropical practitioner to a rational and successful practice. In the clinical record of my own practice, (from which the following observations are drawn), much attention was given to a minute detail of symptoms, indicatory of diseased action in the nervous, circulating, and secreting systems; and every opportunity was taken of ascertaining, after death, what morbid changes were visible in the abdominal and thoracic viscera, the brain, its membranes, and the spinal column. I have also availed myself of the experience of others, in tracing the origin and progress of tropical fever among bodies of recently arrived Europeans, who, in addition to the usual exciting causes of disease, viz., exposure to the sun, and the too free use of ardent spirits, are in a state of eulesia, or predisposition, from high health and extreme richness of the blood. On this head I have before me the highly interesting reports, by several medical officers, of fevers which prevailed at Kaira, in Gujerat, among the men of H.M. 4th Dragoons, who, from the 1st June 1822, to the end of December 1826, suffered in an unprecedented manner from severe febrile disease, attended by an almost unheard-of amount of mortality; the regiment having lost during this period 277 men, out of an average strength of 528. The admissions into hospital were 2781 for all kinds of fever. A troop of European horse artillery, of which I was the assistant-surgeon, at the same station, but more favourably located (the barracks being on a dry, elevated ground), remained comparatively healthy, having only lost five men from the beginning of 1821 to the end of 1822, out of an average strength of 138; the fever cases during these two years were 154. The mortality amongst H.M. 4th Dragoons, and also H.M. 17th Hussars, the regiment that preceded them at this station, was such as to oblige the Government to abandon the camp and barracks at Kaira, and remove the 4th Dragoons to Kirkee in the neighbourhood of Poona, where they became comparatively healthy. The improved healthiness of this regiment, and the diminished sick-list of the dragoon regiments which

succeeded them at the same station, are undoubted evi
superior salubrity of the elevated site and dry climate of
over the low sandy soil, and hot, humid atmosphere o
productive of intermittent and remittent fevers; but whet
ing cause of such be *malaria* from the soil, or the agency
electricity, as supposed by Sir James Murray, is a matter
mined. Regarding their origin, we can only venture t
particular soils and localities produce such atmospheric det
are capable of giving rise to attacks of intermittent and re

The following observations may be arranged under four
I, TROPICAL FEVER IN GENERAL; II, INTERMITTENT; III,
and IV, CONTINUED FEVER of hot climates.

I. TROPICAL FEVER IN GENERAL.

The ordinary and exciting cause of the intermitting a
forms of idiopathic fever within the tropics, is a certain atmo
rioration, generated during the decomposition of vegetabl
which the name "malaria" has been usually given. From
of cause in both types of Tropical Fever, we infer the iden
fevers, which present the same succession of symptoms and
progress, differing only in severity. The conversion of inter
remittents, during the extreme heat of summer or autumn, a
of the latter into the former, on the approach of cold weather
winter, would authorize the conclusion that remittents are o
tents increased in violence and malignity by an augmented i
the nervous system, associated with an excess of vascularity
organs. Whether this vascular or inflammatory action, du
rally disturbed state of the circulation, take place in the
mucous coat of the stomach and intestines, or other abdom
it creates a pyrexial state of the pulse during an otherwis
interval; and the renewed febrile accessions being thus gr
tracted beyond the usual period of duration, so as to leave
apyrexial interval, intermittents thus assume the remitten
is, therefore, of the utmost importance, in the treatment of t
to keep an accurate register of the relative state of the pul
at various periods of the day, in order to mark their prog
enable the practitioner to determine whether the nervous o
systems be most implicated in particular modifications of th
were observed to vary from a nervous to an inflammatory o
type, in proportion to the intensity of *malarious* influenc
by season or locality, and the extent of diurnal atmospher
dependent on situation and peculiarity of climate. In Jul
climate at Kaira, in Gujerat, was unusually cool and healt
very hot, dry season; but the quantity of rain which fell
being smaller than had been known for many years, th
bilious remittent set in among the men of H.M. 4th Dragoon
severe symptoms of *gastric* and *hepatic* disease. It graduall
during September, attained its maximum about the 20th
and was not mitigated, or disposed to change to the interm
before the middle of November; fatal cases of this disease be

terized, during life, by much gastric irritability, and after death, by an extremely vascular state of the mucous coat of the stomach and intestines.

The continued fever of the tropics, which chiefly prevails during the hot season, and is caused by elevated temperature, robust health, and the abuse of intoxicating liquors, is connected with derangement of the vascular system, more complete than is commonly incident to remittents. In the former, elevated temperature, and indulgence in spirit-drinking, produce an increased nervous excitability, accelerated motion of the sanguineous system, increase of carbon in the blood, with corresponding diseased secretion of the liver and intestinal canal; which organs, within the tropics, seem to perform the vicarious office of eliminating from the system the unconsumed portion of carbon with which the blood is surcharged in hot climates, consequent on the diminished volume of oxygen received into the lungs. It but differs from remittent fever, in being more exclusively connected with accelerated arterial action and diseased changes in the vascular system; but the disordering influence of the exciting causes of both, is primarily exerted on the nervous system through an increase of excrementitious matter in the blood. Farther researches are, however, required to determine the nature of those chemical changes of the circulating fluid, which, in both remittent and continued fever, precede the derangement of the nervous and sensorial functions.

Under all its modifications, we can recognize Tropical Fever to be the same malady; and that the order of events, though produced by different causes, presents the same successive changes of the nervous, circulating, and secreting systems. It is, therefore, found differing in degrees of affection of such systems, according to intensity of cause, epidemic or endemic constitution of the atmosphere, idiosyncrasy of individuals, and the previous condition of the organs affected. During those years when an excessively hot season is followed by light rain, and concurrent endemic causes favour the production of intense *malarious* influence, remittent fevers are then found prevailing, with a greater affection of the *brain* and *spinal chord* than is met with under other circumstances, when the rains are heavier and more continued, accompanied by corresponding mild weather. At other times, when excessive heat is followed by light rain and great diminution of temperature, the secretory organs, and digestive apparatus, are violently affected; the liver, at such times, pouring forth large quantities of vitiated bile, associated with great derangement of the stomach and intestinal mucous membrane. Dr. Geddes, therefore, in his excellent clinical illustrations of the diseases of India,[1] remarks with great truth, that intensely hot seasons, previous to the setting in of the rains, favoured the production of paroxysmal fever; and that the prevalence of fever during the hot months is great in proportion to the variations of temperature.

The phenomena of febrile disease, seen in its various modifications, will be more fully detailed under the heads of intermittent, remittent, and continued fever. But subdivisions of these diseases into *cerebral*

[1] "Clinical Illustrations of the Diseases of India," by William Geddes, M.D., page 64.

and *gastric*, *nervous* and *congestive*, founded on modifications and ing symptoms of disease in particular organs, will be useful guide the general treatment, indicating how far general or local blood-le may be necessary to subdue the increased vascular action, or far the physician may be called on to alter diseased secretions, or re them from the stomach and intestines by emetics, purgatives, and curials, before endeavouring to restore to a healthy state the dis excitability of the sensorium and nervous system, by the use of quinine, cold affusion, and other tonics.

II. INTERMITTENT FEVER.

Previously to an attack of chilliness or shivering, with which this generally commenced at Kaira, the patients had languor, yawning, of their limbs, loss of appetite, and deranged biliary secretion. The paroxysm was announced by vertigo and nausea at stomach, accomp by a frequent feeble pulse. In the hot stage there was always severe ache, and sometimes sharp lancinating pain at the epigastrium. W the patient's constitution was good, and not impaired by previous vi disease, the headache abated, or disappeared entirely, along with the at the epigastrium, on the occurrence of the sweating stage. But the inflammatory diathesis existed, along with deficient tone of th cera, the hot stage was protracted, and the sweating stage proved ficient to relieve visceral congestion until the action of the hear been reduced by bleeding. This was particularly apparent in qu ans, in which some of the patients were delirious during the hot f

After all symptoms of paroxysmal febrile heat and increased ar action had subsided, the disease occasionally left behind it pain an largement of the spleen; but, in recent attacks, it was observabl general deficiency of tone in the constitution had more effect than congestion in protracting succeeding paroxysms, and disposing the to run into the remittent type. Most of the quotidians were spu observing no regular hour of attack; and yet there was nothing i type that might entitle them to be classed among varieties of *tertia quartans*.

The cold stage of the intermittent was occasionally absent, or at so slight, that the patient was not sensible of it. In one case, in of the hot fit succeeding the rigor, vomiting, and purging of a resembling the washings of raw meat, followed it. Whenever disease was ushered in by simple chilliness, it was generally conn with a deeply vitiated secretion of black or brown bile. In such the symptoms were less easily removable than where the secretin tem was less affected; and whenever the rigors were severe, the tion of the paroxysm was speediest and most complete.

The tertian type, in one instance, was accompanied by inflamm of the colon, in another by local affection of the chest, and in s others by symptoms of liver disease. Two or three cases of the *ter duplex* were noticed. On one occasion the first fit of fever occurr 10 p. m. on the 21st October, had a remission during the night, a exacerbation on the morning of the 22nd, with an intermission f ing on the evening of this day, the paroxysm having lasted more

twelve hours, and beyond the usual period of a genuine tertian. The state of the pulse was, however, pyrexial on the morning of the 23rd, while the state of the skin was natural. This being the true tertian period, a weak paroxysm came on at 3 p. m. instead of 10 p. m.; and a better marked febrile accession following on the morning of the 24th, was protracted four hours longer than its corresponding one of the 22nd; thus running into the next pyrexial accession, which commenced on the morning of the 25th: by which little or no apyrexial interval being left, the fever began to assume the remittent type.

The irregularity of intermittents is not readily explicable, nor is the condition of the system well known under which their various types are convertible into each other or into remittent fever. It appeared, however, that in the above-mentioned case, the increased volume and frequency of the pulse, where there was no headache or heat of skin, prevented the formation of a well-marked rigor at the tertian period, and thus gave rise on the following day to a renewed effort of the constitution to equalize the broken balance of excitability, and restore the impeded action of the secreting system and capillary circulation. No explanation of the cause of such conversions is obtainable from the morbid appearances visible in the brain and spinal chord of those who die of the disease, as such appearances are confined entirely to the vascular system. The state of the sensorium and nerves, preceding such conversions, is only to be inferred from the effect which cold weather has in changing remittents into intermittents, and the power which bark, quinine, and cold affusion, have in the treatment of intermittents, by preventing the return of the paroxysms. We may consider it sufficiently proved, that this state is one of *atony* of the nerves and stagnation of blood in the capillaries of the lungs,—primary effects, as would appear, of *malaria* or whatever other causes injure the existing principle of excitation or stimulus of the blood, and impede its arterialisation in the pulmonary capillaries. Dr. Currie had asserted that accessions of intermittents might be prevented by affusion of cold water, and M. Fleury has successfully employed this means, before the expected paroxysm, for the cure of intermittents without the aid of quinine.[1] The beneficial effect of the remedy evidently depends on the shock thus communicated to the nervous system and general capillary circulation; and it is to the increased tone which quinine and like tonics produce in the nervous system that they owe their curative effect.

Like intermittent fever, asphyxia and algide cholera are diseases in which the blood, being deprived of its oxygen, is loaded with carbon and gives rise to stagnation in the pulmonary capillaries, with accumulation of it in the right side of the heart. In both intermittents and asphyxia, this stagnation is the immediate effect of suspended arterialisation of the blood, which is frequently secondary in cholera, as in this disease the preternatural exhalation from the bowels renders the circulating fluid so viscid as to prevent its transmission to the air-cells of the lungs, and interrupts those chemical changes necessary to the continuance of

[1] "Bulletin des Acad.", as quoted by Dr. Ranking in "Half Yearly Abstract of the Medical Sciences," vol. vii. (1848), p. 204.

vitality and the production of heat. So forcibly indeed semblance impressed on my mind, by many of the choler in India, that I could not help regarding this disease as stage of an intermittent, in which the diarrhœa, superadde all febrile reaction. The secondary fever which affects cho after the earlier symptoms are removed, has also much re the hot stage of intermittents; and the same atmospheric is found productive of both. There is also a fever peculi one of those "febres intermittentes algidæ" which the late Gray, formerly staff-surgeon in that district, described t cold stage of an intermittent long continued, and attend prostration of strength and occasional diarrhœa. On th the two diseases, and their origin from similar causes, I fin ing remarks on the diseases for May recorded in my r European General Hospital for 1839:—"Enlargement o follicles at the end of the ileum, and in the colon, accom similar state of the mesenteric glands, has been very served in the fatal cases of cholera which happened during The same alteration was witnessed in numerous cases of th it prevailed in London during the year 1832; and this sical condition, which is usually attended, in children a people, by an excessive sero-mucous secretion, is doubtless the impression of atmospheric causes which produce choler otherwise influential in giving rise to the disease. The causes producing this fatal malady, seem connected with *endemic* influence, such as produces intermittent fever, an atmospheric changes which at particular periods of the ye more or less prevalent. The attacks of cholera, when en commonly happen at the changes of the moon. Remitt mittent fevers, with gastro-enteritic affections and diarrh most common forms of disease where cholera is prevalent, ar the same atonic and congestive character which distinguish facts justify the inference that "malaria" is the cause of bo but I will not venture further than point out their connex are as little acquainted with the real nature of febrific mias with the changes of the atmosphere which give rise to epid state of the latter, however, when *endemic* cholera is most India, is a temperature about 85 of Fahrenheit, accompani and cloudy atmosphere, impregnated with moisture, and s a fall of rain or an evident change in the weight of the air, depression of the barometer. During the month the ad cholera took place chiefly on the 16th, 17th, and 18th, af began to fall; a change which had been preceded by weather. Cases of delirium tremens admitted were of a usually congestive character, proving rapidly fatal by the coming comatose, his skin cold and pulse feeble, while the loose; which symptoms seemed to indicate the operation prevailing cause which gave rise to cholera."

Treatment of Intermittent Fever.—It was seldom nece any thing during the cold fit of intermittent in Gujer

the rigors were very severe, however, sixty drops of laudanum were occasionally given with advantage, this medicine moderating the symptoms and restoring the circulation to the surface. It should not, I think, be administered too early, as there is reason to believe that in the commencement of this stage it interrupts the natural chain of events, and produces a tedious hot fit. The best time for giving it is after the cold fit has attained its height.

If the constitution were inflammatory, the previous paroxysms tedious and indisposed to perfect intermission, or if there were any symptoms of local congestion in any of the organs, one full general blood-letting during the hot fit was always attended by success, in rendering the succeeding paroxysms more regular and less difficult of solution. Whenever the natural course of the disease is interrupted by any of the causes mentioned, the patient should be bled, at least once, from the arm. If congestion or inflammation attack the head, the temporal artery should be opened; or if the affection be of the chest, cupping and leeching of the part, followed by a blister, will be necessary. When the liver was affected, and the increased circulation of that organ could not be removed by the usual antiphlogistic means, mercury was employed to produce moderate salivation; and calomel with purgatives was used in all the modifications of the disease. Such were the measures adopted to render the intermissions perfect, and prepare the system for the administration of bark:—quinine at this time not being known for the cure of intermittents. Many of the patients had their heads bathed, during the hot stage, with cold water, and derived much relief from this practice.

Cold douche to the head was more particularly useful in those cases where the regularity of the intermittent was interrupted by a want of tone in the constitution. Men debilitated by former disease and long residence in the climate could not bear general blood-letting in the intermittent; and a partial use of cold douche was found a useful substitute, by bringing on perspiration and relieving congestion of the head. Local blood-letting in such cases was, however, sometimes advisable. The patients had likewise enemata of rice-water and tincture of opium, and at bed-time they took draughts of camphorated mixture, with acetate of ammonia and nitrous ether.

In some cases, salivation proved sufficient to stop the intermittent, but in many more it failed. It was more successful in quotidians than in tertians; and when it did not succeed in curing the former, it generally changed their type into the latter. Bark was of course the principal means of cure, and where properly administered, (when quinine is not obtainable), falls not short of the great character it has acquired. In the cure of intermittents among the native soldiery of India, it is a less expensive medicine than quinine, and is nearly equally efficacious. I found then an ounce of it given in two drachm doses every hour, and immediately before the expected recurrence of the paroxysm, always diminished its severity, and put an entire stop to it about the third or fourth time. In some cases, the severity of the cold fit was increased, but in such, the duration of the hot fit was lessened. It was sometimes necessary, when it nauseated the stomach, to give it in an effervescing draught; and when it produced diarrhœa, it was administered combined

with tincture of opium. To obviate constipation, ten or fi
of the compound rhubarb pill were used; but where ther
derangement of the biliary functions, brisk purging was
immediately after the cessation of a paroxysm; sufficient
thus left for the bark being again given before the period
paroxysmal return. Purging was more necessary in quotid
the other types. Failures of the bark, which have been re
be ascribed more to a want of foresight in the practitioner, t
of virtue in the remedy. When types of the intermittent a
with an inflammatory diathesis, the secretions generally d
no measures taken to remove such before the administrati
the medicine may prove worse than useless; and even in t
tration of quinine, a combination of it with a mercurial
powder, along with saline mixture and nitrous ether to
kidneys, will be found of great utility in the cure.

In one case of quartan, the *liquor arsenicalis* was give
plete success. after mercury, oxyd of zinc, and bark, had
vain. The fever was of several months standing, the sec
the liver brown and vitiated, and mercury had failed in pr
salivation. The arsenical solution was given in a dose o
immediately before the anticipated return of the paroxysm
end to it at the third administration. The cessation of t
accompanied by a very copious salivation, and a return of h
secretion.

32 Oxford Square, LONDON, November 1848.

(To be concluded in next Number.)

ON THE USE OF CHLOROFORM IN SU
OPERATIONS AND MIDWIFERY.

By JOHN SNOW, M.D.

I.—*Comparison of Chloroform with Ether.*—II. *Circums*
forbid its use, or modify its action.—III. *Mode of adm*
—IV. *Description of its effects.*—V. *Results of its e*
VI. *The cases in which Chloroform is applicable in*
VII. *Directions for its employment.*

I. It is now just two years since the news of the Inhala
for preventing the pain of surgical operations, reached
and a little more than a year, since Chloroform was introdu
stitute for it. The result of experience has been, to she
of these agents is capable of entirely preventing the pai
severe operations; and that when employed with care, an
knowledge of their effects, they are free from danger. Alth
can be effected with Chloroform which might not be acc
the aid of Ether, yet it possesses, as was stated by Dr.
introducing it, certain minor advantages,—in being less p
portable, not leaving a disagreeable odour in the breath,
quently causing excitement previous to the insensibility
properties have been sufficient to enable it to be used, t

total exclusion of Ether from practice. There are some surgical operations, however, in which I think that Ether should still have the preference. I allude to the reduction of dislocations and strangulated hernise, —operations in which complete relaxation of the muscles is required: as this is more easily obtained by the use of Ether. A degree of rigidity of the muscles, which gives place to a state of relaxation, by continuing the inhalation, is liable to be induced by both vapours; but is more frequent and intense, and less easily overcome, under the use of Chloroform than of Ether.

II. Any active inflammation in the head or chest ought, probably, to contra-indicate the use of Chloroform, in the present state of our knowledge respecting it; but, as surgical operations are not undertaken, and parturition seldom occurs, under these circumstances, they can hardly be considered as limitations of its employment. Chronic affections do not appear to offer any impediment to the careful use of it. I have, on three or four occasions, administered it to patients in phthisis, requiring an operation, and several times when chronic bronchitis existed; when, so far from being injurious, it generally relieved the cough for a time. Diseases of the heart have caused more dread of danger from Chloroform than those of any other organ,—especially since the death at Mr. Robinson's. But it appears, from the evidence adduced, that the exciting cause of the fatal event, in that instance, was rather the apprehension of what was about to be done, than the vapour which the patient had but just begun to inhale, in a very diluted state. I have seen Chloroform inhaled, without ill consequences, in several operations where the heart was more or less diseased; and have lately been informed by a medical man, that he had administered it with relief to the difficulty of breathing attending advanced valvular disease. Consequently, if a patient with disease of the heart is obliged to undergo a painful operation, the Chloroform, so far from being probably injurious, is likely to be of the greatest service, by preventing the emotion arising both from the pain and the anticipation of it. But it should be carefully administered, so as to excite the circulation as little as possible; and its effects carried no further, and continued no longer, than is necessary to prevent the severe part of the pain, in order to lessen the risk of subsequent sickness, and the depression which often attends it.

The general conditions of the patient, apart from acute disease, though they modify the action of Chloroform, are no obstacle to its employment or efficiency. I have had to administer it, several times, within a few weeks after birth, as well as in extreme old age, and have seen no ill effects from its use. Children are, indeed, very favourable subjects for its action, as it does not cause in them the excitement and muscular rigidity which are occasionally met with in adult patients; and immunity from pain can generally be obtained, without any thing like coma, whilst they are apparently in a dreaming state. They are quickly affected with the vapour, on account of the activity of their respiration and circulation. This should be borne in mind in practice.

Persons whose strength is somewhat reduced from any cause, also yield more quietly to the influence of Chloroform, than those in robust health. The greatest debility is no impediment to its use. Some of the patients in St. George's Hospital, who have undergone amputations,

under both Chloroform and Ether, with a favourable result, w
a feeble state, that, probably, the operations would not have
taken, except for the discovery of anæsthesia.

In patients subject to hysteria, a paroxysm is sometimes
by the vapour, but it can always be quieted by continuing the

III. Chloroform is recommended by Dr. Simpson to be
handkerchief: but in using such a powerful medicine as th
doubtedly desirable that there should be some better mea
lating the quantity of it, in the air the patient breathes;
cases have occurred, in different parts of the world, in which
tion of it, on a handkerchief, has been suddenly fatal; appar
the air inspired containing so much vapour, as to impregnat
passing through the lungs, so strongly, that it caused para
heart, on entering that organ, and circulating through th
artery. There are several inhalers which permit of more o
lation of the quantity of vapour. That which I employ, h
scribed in the *Medical Gazette* and *Lancet*. I never give
without the apparatus, except to keep up the insensibility d
tions on the face or mouth, when it cannot be re-applied,
use a sponge squeezed out of cold water—putting on only te
minims at a time.

The stomach ought not to contain much food when a pati
as it would probably be vomited. The recumbent postur
chosen when it is suitable for the operation; or if the pati
seated, it should be on an easy chair, so that he may be dul
when insensible. In operations on the anus, lying on th
the knees drawn up, is much more convenient, as far as the
is concerned, than leaning over a table or bed, with the
ground. The vapour should be much diluted at first, in
ally to blunt the sensibility of the mucous membrane of
sages, and thus avoid exciting cough.

IV. To facilitate the directions for giving Chloroform,
effects it is capable of producing on the nervous centres, ma
into five degrees. The first degree includes the slighter
are experienced by the patient, whilst he retains sufficient c
to appreciate his situation, and know what is occurring
The second degree is the dreaming, or wandering state
which is observed, when the patient is not silent, immediat
the loss of consciousness. In the third degree, there are
movements, articulate sounds, or anything indicating the
ideas; but there may be involuntary muscular contractions
The fourth degree is a state of absolute relaxation of th
muscles, in which no contraction can be excited in them. T
is sometimes stertorous in this degree. The fifth degree i
impeded respiration observed previous to death, in anim
Chloroform. It must be stated, that the various degrees r
into each other, and cannot always be clearly distinguishe
it is seldom necessary to carry the narcotism beyond the
even in the most severe operations. The pulse is general
accelerated during the inhalation, but it is not a criterion
of the vapour.

The greater number of patients become quietly insensible, without offering any resistance; but, in a considerable part of them, there is some excitement, as soon as they lose their consciousness, and it is often necessary to hold their hands. A great number of female patients utter a singing sound at this stage of the inhalation. By continuing to administer the vapour the excitement is soon overcome. When voluntary motion, or talking, is no longer observed, it is desirable to examine the eye, to gain additional information as to the patient's state. If the eye be turned up, it is usually an indication that the narcotism has proceeded to the third degree, and the same is true of congestion of the vessels of the conjunctiva; but these symptoms are not met with in every case. The degree of sensibility of the conjunctiva is a better indication whether or not an operation will cause pain, than any other sign taken alone; but it is proper to take into consideration every symptom that can be observed. When the margin of the eyelid can be touched without causing contraction of the orbicularis muscle, or even when it causes but slight contraction, any operation can be performed without causing pain. As the effects of the vapour, unless very much diluted, continue to increase, for about twenty seconds, after the inhalation of it is discontinued, it is advisable, when the patient is nearly insensible, to intermit the vapour for two or three inspirations, now and then, or to dilute it with more air, if there be a valve for that purpose. Conducted in this way, the process of making the patient insensible usually occupies from two to three minutes; and this is safer than proceeding more expeditiously.

When the operation is not of very short duration, it is usually necessary to give a little Chloroform, from time to time, during its performance. Whilst important steps of an operation are in progress, it is best to prevent the least return of either voluntary motion or flinching; but in the subsidiary and concluding parts, we may wait till there is some clear sign of sensation. The loss of common sensibility generally outlasts the narcotism of the nervous centres, so that during the greater part of a protracted operation, the patient is usually in the second degree—often muttering unintelligibly, or talking in his dreams; and it now and then happens that arteries can be tied, or sutures introduced, without pain, after complete consciousness has returned. The protracted inhalation of Chloroform has a tendency to reduce the temperature of the body, consequently it is advisable to endeavour to keep the patient warm, both during the operation and afterwards; but this, of course, need not interfere with the exposure of the part that has been the seat of operation to the air, or making cold applications to it.

After the inhalation has been discontinued, the patient spontaneously recovers from its effects. Consciousness usually returns in a few minutes,—in some cases suddenly; in others, after a short period of incoherence or inebriation. It is best not to speak to the patient prematurely, but to quietly await the complete return of consciousness.

v. The patient, after a severe operation under Chloroform, is in a calmer and more cheerful state of mind than if he had suffered the pain; and after an amputation he seldom experiences nervous starting of the stump. These are circumstances that cannot fail to contribute to his

recovery; and as far as statistics of the larger operations collected, they are favourable to the practice of anæsthesia.

VI. The objections which have been made to the use of Chl midwifery are nearly all *à priori* ones, and are capable of be replies of the same nature; but a question, concerning a line practice, should be examined and decided on chiefly by experie are many labours so favourable, that the patient bears what is cheerfully, and makes no complaint, unless it be for a few whilst the child's head is passing through the external parts. of this kind, which are probably the truly healthy ones, Chlor not seem to be indicated, and I have not seen it applied. in which I have administered it, have been protracted, or att severe pain, or both these conditions have been combined; o been cases in which manual or instrumental aid has been re it has always afforded the greatest relief, and been attended effects, to the mother or her offspring. There was hæmor the birth of the child in one instance, but the patient had su the same occurrence in previous confinements.

VII. The dose of vapour required at one time, in unassis is very much less than for a surgical operation. It is o strong uterine action, in order to facilitate turning the child, chirurgical dose of the vapour is required in obstetric practi instrumental delivery, there is less pain, and less neces patient to be perfectly still, than in operations in which t used. Chloroform should be given in midwifery, as in sur tions, with an apparatus; or if the medical attendant be with one, he should put only from ten to fifteen minims o kerchief at a time. I feel obliged entirely to dissent from recommended by Dr. Simpson, in the *Monthly Journal Science* for October last, of putting three or four drachms o kerchief to begin with. I do not dispute that he has tac practice this plan without accident, but I feel sure that it fatal results in other hands. I also disapprove of his practice over the handkerchief afterwards to the husband or nurse. T of administering Chloroform is also objectionable from the vapour that becomes diffused through the air of the room Dr. Simpson's account of the quantity employed, it must co an hour more than the plan I employ. This I mention show that dispensing with the use of an apparatus is not a s

When the first stage of labour is tedious and painful, and wearied and desponding, the greatest relief may often be af out altogether removing consciousness; and whilst the uter tions are not powerful, it is best to give but a very small Chloroform, or they become suspended, which, however, is consequence, as they soon return. The best way of admini vapour, is to let the patient inhale a little at the beginn pain. Commencing with the inhalation early in labour, doe a necessity of continuing it throughout; for the patient, k she can have occasional relief, often bears the pain more And after the Chloroform is discontinued, it exerts sufficien for a time, to counteract the persistent uneasiness there often

the pains, and thus to enable the patient to have short periods of refreshing sleep.

When the pains are stronger, rather more Chloroform can be given, without retarding the progress of the labour, but the effect of it should not exceed the second degree; and except in obstetric operations, the usual symptoms of labour ought to continue. The object should be only to prevent the patient's sufferings by making her unconscious; and whilst articulate complaints and loud cries are prevented, to allow the reflex or instinctive auxiliary action of the respiratory, and even voluntary muscles to continue, accompanied, perhaps, with some moaning. I believe that, with a little management, Chloroform may generally be administered without retarding the labour; and in cases rendered tedious by rigidity of the os uteri, or obstructed by an unyielding state of the perineum, Chloroform shortens the duration of labour very much, by causing the relaxation of these parts. There are instances, also, in which a moderate exhibition of the vapour seems to strengthen the reflex bearing-down efforts, which had probably been diminished by fear of the pain.

Chloroform has been given with advantage by Mr. Landsdowne, of Bristol, and others, for the relief of severe after-pains. It may be used for this purpose in some cases where it has not been required during labour.

London, Frith Street, Soho Square, December 1848.

AN ANOMALOUS CASE OF SPINAL AFFECTION.

By GOLDING BIRD, A.M., M.D., F.R.S., Fellow of the Royal College of Physicians; Assistant Physician to, and Professor of Materia Medica at, Guy's Hospital.

[The following notice of a very remarkable case was read before the Physical Society of Guy's Hospital three years ago. Its, to me, unique character, has induced me to think it worthy of publication. The only alteration made in the original paper, has been the somewhat abridging of it.—G. B.]

No one can for any length of time be engaged in the active practice of his profession, or in the observation of disease, without encountering phenomena sufficiently puzzling to surround him with unforeseen difficulties, and often sufficiently inexplicable to force upon his mind the conclusion, that medical science, or at least the share of it falling to his lot, is by no means perfect or exact. I believe this will be granted by all whose experience has been extensive enough to produce humility; for a sense of perfection in acquirements generally goes hand in hand with limited knowledge. Although I do not assent to the Celsian dogma, *Medicina est ars conjecturalis*, still cases like the one I hope to make the text for a profitable discussion this evening, show us, valueless as are mere conjectural arguments, how carefully we must go on collecting instances, (in the phraseology of Bacon), before we can hope to draw inductions sufficiently extended to act as the keys to the obscurity shrouding the causes of many pathological conditions.

If these remarks be considered applicable to disease in g
much more must they be so to diseases of the nervous syst
cular. These still, in too many instances, continue to baff
penetrating physician; their ætiology being frequently m
their pathology insufficient, and their therapeia unsatisfactory
considering how much we know of its function and structu
the pathological changes of the spinal chord afford for our c
the most remarkable anomalies that are to be met with
Part of these are to be explained by the fact of the difficulti
the investigation of the morbid anatomy of the brain and spi
no less from the time and trouble attending its dissection
the frequently vague and indistinct evidences of diseased acti
in it after death. Often, too, some of the most remarkab
involving morbid functional and structural changes of t
question, are not fatal, and thus the patient's recovery prese
perable obstacle to the application of the scalpel of the morbi
To the latter category, the case I am now about to relate be
in detailing it, I beg the Society to recollect, that although
hesitate to avow what were my own opinions formed during
I purpose doing so with the utmost brevity, as I venture t
with the utmost diffidence.

The lady who was the subject of the following case, reside
in Essex, about forty miles from London. I was summon
the night of September 19, 1844, to meet Dr. Baker an
Thorpe of Maldon, the very experienced physician and su
whose care she was. This lady was 43 years of age, of n
disposition, possessed of great moral courage and firmness o
indeed, who was disposed (to use her own words) "to look
side of everything", and in no way the subject, at any peri
of the class of ailments set down as nervous, hysterical, et
been married sixteen years, and had never conceived; n
was performed regularly and painlessly; her general healt
indeed excellent, although perhaps not robust. Her circu
life were affluent, and she declared that neither mentall
had she experienced any anxiety for years. The following
given me. Six weeks before my visit, whilst at church,
that a gnat, or some other insect, bit her right leg a few i
the ancle, and on returning home, as she felt some pain,
her stocking, and discovered two small punctures like those
a gnat. Believing that she had merely afforded a meal to
winged depredators, she thought no more of it, although s
recollects feeling pain in the seat of the punctures all th
On that day she went on a visit to a town in a distant
county, and in the evening the leg became painful, swelli
locality of the bites, as she expressed it, death-c
the ensuing morning the swelling appeared increasing, sh
and returned home, and summoned her physician and su
Baker informed me, that on his visit the *right* leg app
the subject of absorbent inflammation; in the course
day or two this became severe; the thigh swelled consi
inguinal glands became large, hard, and painful, the whole

white and intensely tender, as like phlegmasia dolens as possible. This swelling and tumefaction, under judicious treatment, slowly subsided; but intense pain, apparently neuralgic, remained in the limb, most intense in the tract of the sciatic and anterior crural nerves. A few days passed over, and just as the patient was congratulating herself on approaching convalescence, and before she had left the bed, the *left* leg began to swell and become painful, and the left inguinal glands were inflamed; and this limb went through the several stages of what was regarded as phlegmasia dolens, only more rapidly, and with less pain than the other. On its recession, however, it left behind the same painful sequelæ, so that the patient was tortured by neuralgic pains in both limbs,—most intense in the course of the two great nerves before alluded to. The tract of the pain was continuous from the ischiatic notch to the junction of the last lumbar vertebra with the sacrum, where there was, to use the lady's words, "a concentration of agony,"—the slightest touch producing insufferable torture. This excessive intolerance of pressure in that region slowly subsided, and was followed by the insidious accession of the symptoms under which I found her labouring. The first of these was observed a week before my visit, and consequently five weeks after the supposed gnat-bite.

I found her lying on her back in bed, with a remarkably cheerful expression of countenance, and slightly flushed face and hot skin,—both which appeared to be owing to a medical examination at midnight, rather than to disease, as they were replaced by a cool skin and rather pallid cheek, before I left her chamber. She spoke cheerfully, and generally with a smile, as was customary with her. Pulse 88,—generally, however, being but 70; tongue clean and moist. Seeing her thus cheerful, I took her hand; and in an instant a marvellous change came over her,—the hand was convulsively contracted, the arm jerked up with almost tetanic violence, the face assumed a hippocratic expression of anguish, and she uttered a scream of pain. Proceeding with my examination, I found that when lying calmly she was free from all pain; but the slightest touch of the limbs produced these tetanic convulsions, accompanied by intense pain in the spine. It was remarkable that *a gentle touch, or fillip with the finger, produced these attacks with the greatest intensity,—a carefully-applied and firm grasp causing but little uneasiness.* The sensibility of the arm to touch, was, however, far less than that of the feet. Here the touch of a feather was sufficient to produce convulsions more intense than I have ever witnessed, save in tetanus or hydrophobia; the legs and thighs becoming of an iron-like hardness, from the violent spastic contractions of the muscles, and the pain in the lumbar region of the spine being most distressing. Slighter spasms were excited in the muscles of the chest or abdomen, by a sudden touch or pressure of the integuments of these regions, provided it were applied below the mammæ; above this part, as well as on the face and neck, I was by no means satisfied that any morbid excitability existed. It was remarkable that, when the arms were thrown into the state of spasm, she always referred the pain to the upper dorsal region; and when the legs were convulsed, she complained alone of the sacro-lumbar spinal region. Ordinary sensation and motion appeared perfect, at least, so far as she could judge; for she dreaded all attempts at mo-

tion when in bed, as the mere friction of the moving limbs a bed-clothes was sufficient to excite all the distressing sympto endeavoured to depict. In the free air, and unsupported, sh could move her arms, and when supported by two other pe could readily move her legs. Her strength was nearly gone excessively weak, and could scarcely, by being half-carried, to sofa; and at each pressure of the feet against the floor, spasm

On examining the spine, (which was well formed), by p well as by the application of a hot sponge, I found but little rienced in the cervical region; the dorsal was tender, and there gave her a painful thrill, with the excitation of slight the upper extremities. The pain increased in proportion as th was applied lower, until the last two lumbar vertebræ wer where a sharp blow produced insufferable pain, and a rigid legs approaching opisthotonos; the sacrum, however, could and the coccyx bent up, without pain. There was neither i action, nor paralysis of the bladder or rectum; appetite bowels open daily. Urine at night, clear, neutral, sp. gr. morning, deposited urate of ammonia, acid, sp. gr. 1028; at like water, acid, sp. gr. 1008. All the specimens were free men, and did not become alkaline in twelve hours.

I confess I found myself in no small difficulty in coming mination on the nature of this very curious case. I had be lady, naturally anything but irritable, or of nervous or hyster ament, who a few weeks before was in good health. She suff believes, from the bite of an insignificant insect, and within t hours absorbent inflammation commences in the bitten limb; through a severe but not protracted course, nearly identical of phlegmasia dolens in a puerperal woman; the tension sub pain in the tract of the nervous trunks remains. After a sh a less intense but similar state appears in the unbitten phlegmasia subsides, but neuralgia is left. The vascular acti limbs having disappeared, the neuralgic pains appear to m vance, and meet: and are found in greater intensity at lumbar articulation. A temporary and delusive improvement health occurs, only to be succeeded by an exalted irritabi whole extent of the spinal chord, from the cervical region d the *reflex function becoming intensely marked, quite independ loss of the influence of volition over the limbs, and a physiolog tion being presented, resembling more closely that observed i tated snake than any other.* The brain was unaffected: me soning, the senses, all perfect; motion and sensation univer fected. In a word, but one conclusion could be drawn; viz patient was suffering from a highly irritable state of the t axis, whatever else she may have been labouring under. action was gone; the calm face, the clear tongue, the quiet correct condition of the functions, all indicated the absence those morbid changes included in the phenomena of inflamm connected probably more particularly with want of integri vegetative or organic nervous system. Then, the perfect con sensibility, and volition, demonstrated the integrity of the

want of peripheral pains, the absence of morbid changes in the urine, and absolute freedom from all paralysis, shewed, at least, that there could be no important organic lesion of the spine. One series of functions of this important element of the nervous system seemed nearly alone involved, viz. those which are comprehended under the term of *reflex*, and to which the attention of physiologists has been directed by the laborious and philosophical researches of Dr. Marshall Hall. Yet my experience failed in bringing to my recollection another similar case. I could only look to tetanus and hydrophobia on the one hand, and to chorea on the other, for any justification of the opinion I arrived at, and yet I need not say, how infinitely distant were such analogies. I, however, ventured to give the following opinion; that the gnat-bite having inoculated the patient with a morbid poison, absorbent inflammation occurred as from a dissecting wound, which ran its course, involving probably in the cotemporaneous inflammation the femoral nerves; and, on the subsidence of acute action, left the patient (as is not uncommon after ordinary phlegmasia dolens), the subject of intense neuralgic pain in the affected limb. After the recession of absorbent inflammation in the other leg, the irritable state of the nerves was propagated to the spinal chord, perhaps by extension of a very low form of inflammation, and the result was the production of an exalted irritability of the spinal marrow, analogous to that produced by the inoculation of strychnia.

I am quite prepared to hear this opinion found fault with, for at least it was but begging the question. I have candidly given it in the words in which I expressed it at the time to Dr. Baker and Mr. Thorpe. I suggested the following mode of treatment.

I. Keeping up the general health, and backing up the constitution against the local disease, by bland nutritious diet.

II. Endeavouring to reduce spinal irritability by rubbing unguentum veratriæ (veratriæ, gr. viij, adipis ʒ vj), along the spine twice a day.

III. Endeavouring to restore the reflex influence more to the dominion of the will, by nervine tonics, and gently stimulating the capillary circulation generally, by the mildest alteratives. As she had taken mercurials before I saw her, I suggested sulphate of zinc, in doses of gr. i, three times a day (the dose being increased every third day), with gr. iij of iodide of potassium. I need hardly say I suggested the sulphate of zinc from its remarkable influence in chorea and allied affections.

A month passed over before I heard of her progress. The excited state of the spine had, I learnt, rather increased for a week after my visit, and then became stationary. As she did not improve, the family became anxious; farther consultation was desired, and I was again summoned on October 21st, not quite five weeks after my first visit. I found the patient as cheerful and happy as before, perhaps rather improved in health. I fancied that the spasmodic shocks—for such alone was the term I could apply to them—were less intense. I could, however, arrive at no other opinion than I had previously, and I begged a continuance of the treatment. She had borne the sulphate of zinc well, up to ℈j thrice a day. I replaced it by valerianate of zinc for a change, and substituted ung. aconitinæ (aconitinæ gr. i, adipis ʒ i)

for ung. veratriæ. I heard of her afterwards several times and, at my wish, as she was left anæmiated, iron, in the fo ammonio-citrate, was given for a few weeks, and the nervo of the weakened limbs restored by carefully and gently appli dynamic currents. I did not see this lady again until the 21s 1845, exactly a twelvemonth after my last visit; being c patient in a neighbouring village, I went on to her residence I was much gratified at seeing her in her drawing-room, sitt easy-chair, from which she rose, with but a slight effort, to we Her history, from the time of my seeing her a twelvemonth b be told in a few words. The state in which I left her gra sided, under the use of the remedies; the pain in the legs after the cessation of spasms. At the end of the month ceased, having been gradually and insidiously replaced by p lysis of motion, a condition from which she had very slowl under the influence of the electricity; and when I saw h absolutely well, with the exception of some rigidity in the l dering assistance necessary in walking. She has managed church, up a tolerably steep hill, without support.

As I stated at the outset, I do not purpose making any r this case. It was to me a novel one. I have but once sinc at all approaching to it; and it is for the members of this discuss its nature. I frankly state, that my mind is by no m made up as to the pathology of the case, than at the term visit. As to my diagnosis, I give it to the Society, as I gav lady's medical attendants; it led me to reason out a mode of under which, (and, I hope, to a certain extent, by the aid of has been nearly restored to health. Perhaps I may be allo mit for discussion the following points, having, in the co narrative of the case, expressed my own opinion with regard them.

I. Had the gnat-bites, and the consequent absorption poison, anything to do with the origin of the affection?

II. Was the supposed phlegmasia dolens really phlebitis, absorbents? or, was the inflammation really limited to the nerves of the limbs?

III. How came the unbitten leg to be involved?

IV. Was the affection of the spinal chord confined to its th condarily only affecting the portion presiding over reflex p or, was the condition simply one of irritation?

V. Was the subsequent paralysis of motion a result of the s the spine which co-existed with the excited state of the refle or, was it a mere consequence of exhausted energy, such as in the leg of a frog, after over-stimulating it by a galvanic c

14, Myddelton Square, London, Dec. 1848.

BIBLIOGRAPHICAL RECORD.

A Practical Treatise on the Diseases Peculiar to Women; illustrated by Cases derived from Hospital and Private Practice. By Samuel Ashwell, M.D., late Obstetric Physician and Lecturer to Guy's Hospital. Third edition. London: 1848. pp. 772.

We purpose to give a critical and practical sketch of the present work. Its importance would deserve a more lengthened digest, as we know of no other work of the present day of equal size, and devoted to medicine, of which a third edition has been called for in an equally short space of time; we shall, however, attempt to exhibit briefly all the more prominent points of Dr. Ashwell's volume.

The work is divided into two parts. Part I treats of the Functional Diseases of the uterine system. Part II is devoted to the Organic Diseases of the internal and external female genitals.

The first subject discussed is Chlorosis, and its various local and constitutional complications. In his preliminary observations, the author gives the following terse definition: "Chlorosis ought to be attributed to an impoverished circulation, and undeveloped ovaries." This undoubtedly is the pith of the whole matter, and supplies the indications of treatment. On another point, namely, the ovular theory of menstruation, Dr. Ashwell is evidently in doubt, his own post-mortem experience having been against the unlimited reception of this doctrine, and he waits for further evidence. Here he is at issue with a vast amount of experimental physiology, and is, we think, over-cautious. The treatment of chlorotic cases, recommended by the author, is simple. Air, sun-light, exercise; attention to the stomach and intestinal canal; local and constitutional emmenagogues,—the chief place among the latter being given to the iodide of iron in moderate doses.

In the chapter on Amenorrhœa, the forms of the disorder connected with, 1, retention, and 2, suppression, of the catamenial flow, are considered. The incurable cases are those connected with congenital absence, or total degeneration, of the ovaria. The subdivisions and forms of the disorder are succinctly discussed. In the remarks on the influence of mental emotion, on the catamenial functions, the following interesting observations occur.

"Dr. Gooch relates, that a patient consulted him long after the entry of the Cossacks into Paris for an amenorrhœa, which was solely produced by the alarm she experienced on that event: and Dr. Churchill states, that almost all the women who are sent up to the Richmond Penitentiary, near Dublin, after having been tried at the recorder's court, labour under suppression, in consequence of the mental agitation and distress they have undergone. If it be asked, how these causes operate? I reply, very differently. The effects being modified, not only by the intensity of the cause, but in a great measure also, by the constitution of the individual."

The most dangerous form of suppression is the acute, occurring in plethoric subjects. Gooch has seen gangrene of the uterus; Capuron, apoplexy: and Churchill, inflammation of remote organs. Opposed to such cases are the instances of amenorrhœa which occur from mere debility in the course of chronic and exhausting maladies.

Of local Emmenagogues, Dr. Ashwell has seen good effects result from electricity; but he regards it as an uncertain remedy: of galvanism he has had no experience: of stimulant injections, a drachm of the liquor ammoniæ fort. in sixteen ounces of tepid water, is advised in amenorrhœa without local congestion: the mustard hip-bath, at 98°, twice a day, is mentioned as an

effectual adjuvant to this injection: injections into the uterine
Ashwell denounces as dangerous. Of medicated bougies he h
experience. A curious instance of the influence of mustard is
from Dr. Rigby:—

"Some school-girls, for sport, swallowed mustard spread thickl
bread; and in all the elder girls it produced menstruation in a
although the regular period for its appearance had not arrived."

Dr. Ashwell speaks of this as the effects of "the exhibition of
the stomach." We would rather suggest, that the mustard acted
pism to the mucous coat of the stomach, and affected the muco
the uterus synergetically, just as in cases where sinapisms are app
mammæ. Aloetic injections, leeches to the vulva, pelvic em
friction, etc., are simply referred to.

Of constitutional Emmenagogues, Dr. Ashwell discusses the var
of mercury, iron, the ergot, iodine, nitrate of potash, digitalis,
in a truly clear and practical manner. Respecting the influence
curious fact is quoted from Dr. Davis. It is said, that in the neig
of Tunbridge there used to stand a remarkably fine savin-tree, th
of the leaves of which were used not only to cure amenorrhœa, bu
abortion. We are not aware whether this vegetable and irregu
tioner in obstetrics be still in existence.

The curious subject of VICARIOUS MENSTRUATION, Dr. Ashwell d
"A discharge, generally of blood, from other parts than the uterus
ing menstruation, and, in its return, occasionally observing a
period." With Dr. Locock, Dr. Ashwell is puzzled whether to
as physiological or pathological, as it certainly lacks some of the
either the one or the other. The more common seats of vicarious
tion, are the pulmonary, gastric, and rectal mucous tissues, th
the umbilicus, the salivary glands, the bladder, ears, ulcers of t
axillæ, etc. Of the causes of this singular affection Dr. Ashwell i
and to the various questions which may be asked respecting th
solution of the difficulty, by referring it to the suppression of
secretions, and the influence of plethora, he says frankly, "I cann
If the enigma can be explained at all, it will probably be on the
laid down by Dr. Tyler Smith, in his inquiry into the cause of t
cities of the female sexual system, and the reasons why the catam
return at a period of twenty-eight days. This physician has work
reciprocal actions between the ovaries, the uterus, and the ma
very beautiful manner; and the extension of the catamenia to s
uterine organ, probably depends on a divergence of the neural a
stantly going on between these organs.

On the pages devoted to DYSMENORRHŒA in its neuralgic, ple
congestive forms, we shall not remark further than to say they are
practical. Dr. Ashwell enters into the subject of "dysmenorrhœa
on mechanical obstruction" very fully. His remarks are highly i
He is disposed to give a very qualified assent to the possibility of
form of the disorder by mechanical bougies, or by incision of the os
interesting case is referred to, in which both dysmenorrhœa and st
cured by Dr. Oldham by incision. The question of the nature of
branous exudation thrown off in some forms of dysmenorrhœa, is
discussed. Our author is quite indisposed to receive the hypoth
Simpson, that at each period the mucous membrane is actually
from the uterine surface. For ourselves, we can see no difficulty
of believing that, in a periodic inflammatory affection, a false
should be formed, just as it is in croup and some forms of enterit
treatment of dysmenorrhœa a stress is laid on the propriety of l
os uteri. This we can declare to be of the first importance. At
time, even with the best authorities, there is much vagueness ab

matory dysmenorrhœa. The ovaria, as the *primum movens* of menstruation, are not sufficiently taken into account; and the combination of the disease with the catamenial discharge prevents it from being treated like other local inflammations. Yet there is no disease of the female organs of more importance in many points of view. Though not a fatal malady, it often produces sterility, and destroys the hope of offspring; it is, in fact, in its various forms, *the* cause of infecundity, either by morbid changes of the uterus or of the fallopian tubes. If we made any serious complaint against Dr. Ashwell's book, it would be, that throughout he has taken no notice of sterility, except in an accidental manner.

Dr. Ashwell divides MENORRHAGIA—*first*, into simply profuse menstruation without uterine bleeding; and, *second*, profuse menstruation accompanied by direct loss of blood from the uterine arteries. The first, and most common form, is simply an exaggeration of the periodical secretion; the second is a genuine periodical hæmorrhage. The main distinction, however, which is well pointed out by Dr. Ashwell, is between active and passive hæmorrhage; the one requiring depletory, and the other corroborant, treatment.

Some excellent remarks are made, in the chapter on LEUCORRHŒA, on the amount of mucous secretion which may be considered physiological or pathological, respectively. The amount of the ordinary secretion, and its continuance in some women during a long course of years without any great distress to the economy, leads many persons to look on leucorrhœal discharges as almost a normal condition. But as Dr. Ashwell forcibly says, "It is still disease; for in health there is an accurate relation between the amount of secretion and the purpose which it serves, viz., lubrication of surface. When, from any cause, its amount is increased beyond what is necessary for this important end, it is morbid, although in many instances remedies are scarcely required for its cure." One point which has attracted our attention, relates to the presumed infrequency of inflammation of the cervix uteri in leucorrhœal discharges. Dr. Ashwell gives to that obstetric veteran, Sir Charles Clarke, the credit of having first described the symptoms and treatment of this affection. He says, moreover, that out of nearly one thousand cases at Guy's, inflammation of the os and cervix occurred only twenty times. Dr. Ashwell, however, appears to make the absence of acute pain on pressure the sign of the non-existence of this affection. Now we believe that a considerable amount of inflammation of the os and cervix may exist without the presence of severe pain on direct pressure. As regards the frequency of this affection, our experience coincides with that of Dr. Henry Bennet.

The chapter on the DISORDERS ATTENDANT ON THE DECLINE OF THE CATAMENIA, directs attention to the affections of the brain and nervous system, congestion of various organs, and structural and malignant changes in the uterine system. Of all these, cerebral disorders are the most common. Such affections are chiefly influenced by the plethora or irritability at this important epoch. Great and deserved stress is laid on the avoidance of stimuli, and the good effects of direct abstraction of blood from the uterus. The chapter on HYSTERIA is very full and satisfactory, but we find it difficult to condense it within the space we can command. Of the mental condition of hysterical patients nothing better has ever been said than the fine line of Sydenham, in which he declares them

"Constant only to inconstancy."

The same words may apply to the disorders of this state, and almost to the effects of remedies and remedial treatment.

A certain reputation is always allotted to the man who discovers a new malady, almost equal to that which attends the discoverer of a new remedy. We owe the next subject, that of HYSTERALGIA, to Gooch. The presence of intense pain without inflammation, illustrates what we have said about the presence of inflammation without pain. It must be confessed by practical men that the uterus is a somewhat contradictory organ. In the treatment of this troublesome affection, Dr. Ashwell relies on scarifications of the os uteri,

and he makes the important observation that not only are pessaries in cases of undoubted prolapsus, but in cases of the absence of th

"Pessaries have long been recommended when there is decided but I am not aware that they have been employed in the abse state. I am more convinced after repeated trials, *that even where marked uterine disease*, they will often give relief, provided the v unusually tender and irritable. In several instances every oth was fruitlessly employed, but the use of a circular box-wood three or four months, seemed really to have cured the affection."

This quotation brings us to the end of the First Part of Dr. A luable work.

(To be concluded in next Number.)

PRACTICAL OBSERVATIONS ON CERTAIN DISEASES OF THE CHEST, PRINCIPLES OF AUSCULTATION. By PEYTON BLAKISTON, 8vo. pp. 368. London: 1848.

We have much satisfaction in directing the attention of ou Dr. Blakiston's treatise on Diseases of the Chest and the Princi cultation. Our limits will not admit of more than a brief allu of the principal chapters, etc.; but the object of this notice will b attained, if we can induce our readers to study the work for thei we feel assured that few can do so, without being repaid for the the acquisition of much valuable information on the importan ably treated by Dr. Blakiston.

The first chapter contains a short summary of such of the sound as are applicable to auscultation of the chest, and it ex concisely and clearly those facts and principles which must be co by the student, before he can make any satisfactory progress in auscultation.

The second chapter is devoted to the consideration of the sou by striking the chest; the third to the auscultation of the sounds o and the two following to auscultation of the sounds of the voice, of the heart. These chapters give little scope for originality, bu sufficient evidence, to satisfy the experienced auscultator, that Dr a master of the science which he undertakes to teach. He excels in giving a physical explanation of the manner in which sou duced and modified by disease. As an instance of this, we woul explanation of the production of sonorous vibrations in liquid p vessel into a straight tube, as from the heart into the aorta; he shows, upon— 1st, the direction in which the fluid enters th its velocity; and 3rd, the nature of the surface of the vessel a the sixth chapter, Dr. Blakiston gives brief directions for the auscultation, and recommends the use of a solid stethoscope in a hollow instrument: the latter, as he says, would convey soun intensity, but of a quality varying with the substance and m instrument, being in every case different from the sound perceiv alone. Some of our friends who had experience in the use o stethoscope recommended by Dr. Blakiston, are disposed to pr hollow stethoscope commonly in use. It has one undoubt over the hollow stethoscope, viz., that of not requiring a caref to the surface of the chest, which is so difficult to effect in children, and in patients much emaciated.

Chapters VII to X inclusive are devoted to the interesting a subject of thoracic aneurism. There is no part of Dr. Blakiston we have read with more satisfaction than that which relates to and treatment of this disease. The cases are well recorded, appearance of fidelity, and all essential points are carefully

is an entire absence of all unnecessary refinement. The chapter on the diagnosis of Thoracic Aneurism concludes with the following summary.

"A careful analysis of the signs observed in thirty-seven cases of thoracic aneurism, leads to the following results.

"No diagnostic sign was furnished by the character of the pulse, or by the presence of pulsation above or behind the clavicles.

"When a pulsation was seen and felt over a prominent spot in the chest, it indicated the presence of a sacculated or mixed aneurism.

"Purring thrill was only valuable as a sign of aneurism in conjunction with other signs.

"A systolic murmur, heard at a distance from the heart, even though it were not heard at the precordial region, only afforded evidence of the existence of aneurism when it was combined with other signs denoting the existence of a circumscribed tumor.

"A double or diastolic murmur confined to one spot, at a distance from the precordial region, denoted the existence of a sacculated aneurism. When a bellows murmur was heard, a dilated aneurism was present.

"The intensity of aneurismal murmur was in a great measure proportioned to the force of the heart's action.

"Aneurism of both kinds existed without the slightest trace of pulsation or murmur.

"Aneurisms arising within the sac of the pericardium were not indicated during lifetime by any characteristic signs."

In the treatment of thoracic aneurism, Dr. Blakiston insists upon the importance of distinguishing simple dilatation from cases of sacculated aneurism.

In the former class of cases the object is "the prevention of further dilatation or rupture by strengthening the walls of the pouch, or by diminishing the force of the current of the blood, or by both means"; while in the treatment of sacculated aneurism our object should be to effect an obliteration of the sac by a deposition of fibrine within it. The means recommended for this purpose are, the use of sedative and purgative medicines, a moderate amount of nutritious food, quiet of body and mind, and the application of cold to the surface of the chest nearest the sac. Dr. Blakiston warns his readers, and with much reason as we think, against bleeding and the general depletory system of Valsalva. Out of eight cases in which Dr. Blakiston had an opportunity of fairly carrying out the method of treatment recommended, there were five in which great relief was obtained, and three in which the treatment failed.

The four succeeding chapters are devoted to the important subject of chronic heart-diseases. These chapters abound in interesting details, and evince great labour and research, with a thorough appreciation of the practical bearing of scientific truth. We shall select one point for comment, since it is one of much interest, and one which Dr. Blakiston has investigated with great success. We allude to the manner in which CARDIAC DISEASE IS CONNECTED WITH SYSTEMIC OBSTRUCTION AND DROPSY. It has long been known that dilatation of the heart's cavities is almost invariably found in cases of cardiac dropsy. It has been a question whether the immediate cause of the dropsy in these cases has been attenuation and consequent weakening of the heart's walls, or whether in cases of dilatation with hypertrophy the excess of the capacity of the heart, relative to that which has been preserved in the blood vessels, may not have been the immediate cause of the obstruction; but cases of hypertrophy with dilatation often exist for a long time without symptoms of obstructed circulation. Dr. Blakiston therefore infers the probability of there being "either some cause of obstruction connected with dilatation as yet undiscovered, or that one of its known causes has in many instances been overlooked." Our author then relates very concisely and clearly the particulars of eleven cases of cardiac disease in which there was no obstruction of the general circulation, and twenty-six cases in which systemic obstruction

was manifested. He also gives, in a tabular form, the morbid found in these cases as well as in one hundred and eighteen others of this analysis is a satisfactory demonstration of the important p *the association of dilatation of the right cavities with tricuspid r* is the essential and immediate cause of impeded systemic cir consequent dropsy. So long as the tricuspid valves efficient orifice, the systemic circulation presents no evidence of obstr imperfection of the tricuspid valves is at once manifested by general circulation. Tricuspid regurgitation may result either producing thickening, shortening or puckering of the valves, or dilatation.

In his chapter on the DIAGNOSIS OF VALVULAR DISEASE, Dr. marks, that a great degree of obstruction in the mitral valv without murmur. This conclusion is in accordance with our own but we have never yet met with one instance in which a syst heard most distinctly at the apex, has been found to coexist w mitral valve. Dr. Blakiston has, however, observed this in cases; and he is too acute and practised an auscultator to have h in his observation. In two of these cases, "the ventricular valves were covered with rough vegetations, so that, probably was caused by the blood passing over this roughened surface. several instances where mitral regurgitation must have existed was detected during life. This we have noticed particularly wh ened valves have left only a very narrow orifice, and when the has been exceedingly rapid.

In a very interesting and valuable chapter on CHRONIC P Blakiston thus briefly gives the results of his observations as t seventy-eight cases of the disease:—"In spite of every effort, ten of them have been lost sight of subsequent to their recove of health of fifteen others cannot be exactly ascertained; it that they are living. Of the remaining fifty-three, not on phthisical. Fourteen are subject to a cough, in five of whom viously to the pleuritic attack. In all it is accompanied by ex tough, gray-coloured mucus." The favourable result of so lar cases is certainly very encouraging; and as Dr. Blakiston obs these facts it is hardly too much to deduce, that, in general, e is attended with but little danger either immediate or in pro the treatment of chronic pleurisy, the experience of our auth ance with that of Louis, in that he has seldom met with a ca operation of paracentesis was indicated.

Passing over the chapters on "Plastic Pneumonia," we co subject treated of by Dr. Blakiston, viz. PHTHISIS PULMONALI development, causes, termination, diagnosis, and treatment, of very ably and fully treated of. In discussing the causes Blakiston considers them as twofold: one class inducing the thesis; and the other favouring the development of tubercl after this derangement of the constitution has taken place former class, he ranks *mental and physical depression*. And ence leads us to agree with him in attaching great importan Phthisis has often followed an attack of influenza; and c quently terminated in the same disease. The following remark

"As illustrative of the effects of mental depression, it ma many cases seemed to arise out of an attack of syphilis or go ral of the young men thus circumstanced had previously en health, and were apparently free from any kind of constituti ever. In most of them, the symptoms of the venereal affect violent; but, living in the constant dread of its discovery they suffered greatly from anxiety of mind. This is only o

of mental depression, which, in my experience, has been so often followed by phthisis, that I cannot refrain from considering it to be a special cause of this disease."

In considering the treatment of phthisis, Dr. Blakiston mentions, first, *specific remedies*; and secondly, certain *plans* of treatment. He appears to have given *naphtha* a fair trial; and states that, in his hands, it has not been found either a specific remedy for phthisis, or one of any great value.

Cod-liver oil Dr. Blakiston has used in many cases, and continues to prescribe it, and to watch its action. He considers that, "although it is not a specific remedy for phthisis, its administration has been found useful in certain cases, when combined with a judicious system of regimen and diet."

Of the three *plans* of treatment,—the antiphlogistic, the expectant, and the tonic,—Dr. Blakiston, with much reason, as we think, agrees with Louis, Sir J. Clark, Dr. Graves, Dr. C. J. B. Williams, and others, in advocating the last. He recommends the union of tonic and sedative remedies; and applies this principle to the *prevention*, *removal*, and *palliation*, of phthisis, at the same time reminding the reader that: "Circumstances will occasionally arise which demand that the plan of treatment should be, to a certain extent, modified; nor does its adoption prevent our employing counter-irritation at the same time, because this remedy may be so managed as not materially to lower the patient."

In the treatment of phthisis there is but too much room for improvement and discovery. Dr. Blakiston is now, we believe, practising at St. Leonard's-on-the-Sea, where (from the concourse of invalids) he will, doubtless, have abundant opportunities of extending his already ample experience in this department. His powers of minute observation, and of philosophical analysis, as displayed in the work now introduced to the notice of our readers, testify that he is well prepared to avail himself of these advantages; and we therefore expect to find, in future editions of his work, additional and valuable results from his continued labours.

On the Influenza, or Epidemic Catarrhal Fever of 1847-8. By Thomas Bevill Peacock, M.D., Physician to the Royal Free Hospital, etc. 8vo. pp. 183. London: 1848.

Dr. Peacock acquits himself well as a faithful and enlightened historian of the London Influenza Epidemic of 1847-8. Like others, we had under treatment, simultaneously with Dr. Peacock, a large number of cases; and though, from the favourable circumstances of the majority, and our want of experience of the disease in an hospital for the destitute poor, the average severity of the cases must have been much less than that which occurred in Dr. Peacock's public practice, yet their distinctive characters were exactly those depicted in the work before us. We quite agree with the author, in considering the Influenza which presented itself in London and its suburbs, in 1847-8, as marked by an affection of the enteric, as well as of the pulmonary, mucous membrane; and that no account could be deemed correct which did not prominently bring out this important fact. In the last chapter of his work, Dr. Peacock shews that, in many former visitations of Influenza, diarrhœa and dysentery were also prominent symptoms.

The remarks on treatment are valuable. Few, who had any experience of the late epidemic, will dissent from the following statement: "On the whole, the treatment adopted was similar to that which would be enjoined in a case of severe catarrh; with this difference, however, that tonics and stimulants were employed more freely, and at an earlier period, than would, in simple catarrh, have been either necessary or desirable." (P. 81.)

We beg to draw special attention to the remarks on the treatment of cases with abdominal and other complications, extending from page 81 to page 97. They are full of sound lessons in practice, and at once commend themselves

to the practitioner, as emanating from one who has carefully st
case, on a large scale, at the bed-side.

Our space does not allow us to do more than transcribe, in a
form, the table of contents:—1. Introductory Review of the C
and Progress of the Epidemic in the metropolis. 2. Simple Ca
3. Catarrhal Fever with Pulmonary Complication. 4. Ditto,
nal Complication. 5. Treatment of the several Forms of t
6. General Remarks on the Nature and Causes of the Epiden
trative cases and tables.

Clinical Observations on the Pathology and Treatment
Fever, from Cases occurring in the Medical Practice of
mew's Hospital. By Edward Latham Ormerod, M.B.,
of Morbid Anatomy at the Hospital. Pp. 244. London:

This work contains some interesting Clinical Reports. T
watched by the author, when under treatment by the hospit
Those who have had much experience in Fever will doubtle
treatise of Dr. Ormerod various points suggestive of criticism,
regret that the facts from which he generalizes are not more n
we are sure they will regard the work as an estimable contr
authentic history of Fever.

The various branches of the subject are discussed in nine
the following titles:—1. Fever in general. 2. The morbid poi
Contagion—Duration—and Incubation of Fever. 3. Affection
examples of the different forms and symptoms—the appropria
4. Affection of the lungs in Fever—Nature of the affection—P
it may occur—Liability of cases thus characterized to relapse—
the only prominent symptom of Fever—Incidental illustrations
of collapse—Treatment of vomiting and diarrhœa. 5 and 6. Af
bowels—Sympathetic affections of the brain, etc.—Treatment.
of the spleen and liver—Passive hæmorrhage—Changes of the
natory of obscure cases with severe symptoms. 8. General sum
—Affections of the skin, nervous system, etc. Remarks on gen
9. The Miliary Fever of 1847—Its mode of outbreak—Compari
epidemics—Examples of the simple and of the mixed form of
Relation to the form of Fever now prevalent.

Physiological, Anatomical, and Pathological Research
Reid, M.D., Professor of Medicine in the University o
8vo. pp. 659. Plates and wood-cuts. Edinburgh: 1848.

Our readers, even the youngest of them, must be more or l
with the principal researches of Dr. John Reid; for they h
sented to the profession in every variety of form, by the medica
text-books, and by all recent writers on physiology in this and o
Still we think that, for the sake of science, it is well to have th
memoirs collected from the various numbers of different jou
which they were scattered, and to have them reprinted in one
the supervision of the eminent author. Experiments, invol
labour and patience, on which important doctrines are sought
are too frequently so abridged, mangled, or misstated by compil
who wish to examine for themselves a physiological question,
in a satisfactory way, by consulting the original memoirs of th
investigations they desire to be acquainted. Hitherto, the essa
Reid have not easily been got at, except by those who have

public libraries; but now, we not only have them collected and reprinted as they originally appeared, but we have excellent appendices to many of them, in which the labours of subsequent investigators are clearly stated and ably criticized. Dr. Reid has acted judiciously in not mingling his original with his new matter, as the progressive steps of discovery are in this way still made manifest, and the share to which each author is entitled is fully displayed.

The volume before us does not contain all the memoirs of Dr. Reid. Those omitted are, one entitled "Anatomical Observations", in the *Edinburgh Medical and Surgical Journal*, No. 128; several cases of Aneurism and Diaphragmatic Hernia, in Nos. 142 and 144 of the same journal; and some articles in the *Cyclopædia of Anatomy and Physiology*. The following are the contents of the volume:—1. Relation between Muscular Contractility and the Nervous System. 2. Order of succession in which the Vital Actions are arrested in Asphyxia. 3. Effects of Venesection in renewing and increasing the Heart's action under certain circumstances. 4 and 5. Experimental Investigation into the functions of the Eight Pair of Nerves, or the Glosso-Pharyngeal, Pneumo-gastric, and Spinal Accessory. 6. Effects of the Lesion of the Trunk of the Ganglionic System of Nerves in the Neck, upon the Eye-ball and its appendages. 7. Anatomy of the Medulla Oblongata. 8. Anatomical Relations of the Blood-vessels of the Mother to those of the Fœtus. 9. Injections of the Vessels in the Fœtus. 10. Sensational and Emotional Reflex Actions. 11. Anatomy and Physiology of the Heart. 12. Measurements of the Heart. 13. Weights of some of the Organs of the Body. 14. Structure of the Mesenteric Glands in the Balænopters Rostrata. 15. Observations on Phlebolites. 16. Three cases of partial Hypertrophy of a Portion of the Organs of Voluntary Motion. 17. Case of Monstrosity by Inclusion; also a case in which both Kidneys were placed on the same side of the Body. 18. Case of Disease of the Spinal Chord, from an Exostosis of the Second Cervical Vertebra. 19. Report on the Epidemic Fever of Edinburgh. 20. Statistics and Pathology of the Continued Fever of Edinburgh. 21. Case of Obliteration of the Vena Cava Superior at its entrance into the Heart. 22. Contributions to Forensic Medicine. 23. Value of Experiments on the Nervous System. 24. Effects of the Entrance of Air into the Veins. 25. The Cerebral Circulation. 26. Anatomical and Physiological Observations on some Zoophytes. 27. Development of the Ova of the Nudibranchiate Mollusca. 28. Development of the Medusæ; and an Account of a New Actinia.

In the preface, Dr. Reid says, that "the state of his health prevented him from bestowing so much attention on the preparation of the appendices affixed to many of these papers, as he should have wished"; and it is pretty generally known, we believe, that if such an apology were required, it had but too sad a justification. In truth, we know, that while this volume was passing through the press, the author had, with a calm heroism, possessed only by those who can look with Christian faith beyond the grave, bid a cheerful farewell to this world, and looked on speedy release from it as his best and only hope. It has, however, pleased Providence to save him, for the last four months, from pain and impending death, by rendering successful the operation performed by his distinguished friend. For this signal deliverance let science rejoice! Most sincerely do we pray that his life may long be spared in comfort to his family, to his friends, and to that profession which he so much adorns by his character as a man, and by his well-earned reputation as a physiologist.

We must not forget to say, that the getting up of this work reflects great credit on the printer and publishers. The volume would not have been produced in better style in London.

HAND-BOOK OF PHYSIOLOGY. By WILLIAM S. KIRKES, M.D. and JAMES PAGET, Lecturer on General Anatomy and Physiology in St. Bartholomew's Hospital. 12mo. pp. 705. London: 1848.

This work, as we are informed in the preface, was, during t of the first portion, designed to be simply an abridgment of D lation of Müller's *Elements of Physiology;* so framed as to in cipal contents of that excellent work in a volume, "propor share of time which can be devoted to physiology, as only on subjects to be studied, in the period of pupillage." It was fo that physiology had made such rapid progress during the sev had elapsed since Dr. Baly's translation appeared, that it wa depart from the original plan, and to recast many chapte Motion, Voice and Speech, the Senses, Generation, and Dev the Supplement to Müller's *Elements*, lately published by D Dr. Baly, are the only parts which are to be considered as m Dr. Kirkes informs us that, "in writing the present work object has been to give such an account of the facts and gene principles of physiology, as may be conveniently consulted b gaged in the study of the sciences; and, more especially, such student may most advantageously use during his attendance and in preparing for examinations. The brevity essential required that only so much of anatomy, chemistry, and the allied to physiology should be introduced, as might serve to ren of knowledge already acquired, or to be obtained, by the s devoted to these subjects. For the same end it was necessa discussions of unsettled questions and expressions of persona ample references are given, not only to works in which these but to those by which the study of physiology may be, in its pursued." The objects of the author in writing this work, as the above extract from his preface, have been amply and ably throughout, he has displayed an extensive and accurate knowl subjects embraced within the wide range of modern physiolo He has evidently consulted the latest British and foreign au has spared no labour to render his *Hand-Book of Physiology* a perfect as possible. The great value of some of the best part such as the description of the development of the Blood Corp the Process of Nutrition, depends in a great measure on th furnished by Mr. Paget, the mention of whose name, as an ass title-page, is a sufficient guarantee to the profession of the ste the volume.

Our space will not permit us to enter at any length into the the points on which we differ from Dr. Kirkes; but we may s some of them. At page 392, when narrating the phenomena the excito-motory actions, (for a knowledge of which we are in genius of Dr. Marshall Hall), it appears to us that the author minated sufficiently between the true excito-motory, and th muscular movements. In the chapter on Respiration, at p stated, that if means be taken to remove the carbonic acid fro air as fast as it is exhaled, "an animal may live in a limited q until nearly the whole of the oxygen is consumed." This sta supported by no trustworthy observations, and is at variance wi of Dr. Snow's interesting experiments, by which it is proved th diminution in the percentage of the oxygen gas, even when no is present, cannot take place without danger to the warm-blo In the same page, Dr. Prout's experiments upon the influence *of the day* upon the amount of carbonic acid exhaled in a gi assumed to be correct, but we believe they have been invalidate

experiments of Coathupe,[1] Vierordt,[2] and others. Dr. Kirkes, we think, attaches too much importance to the results obtained from experiments upon the cerebellum in living animals. The effects of the destruction of this organ by the knife or actual cautery, extend in a greater or less degree to other parts of the encephalon, and we should be more astonished to hear that the voluntary movements remained perfect after such disturbance of the central organs of the nervous system, than that they were seriously deranged. He might justly have applied to these experiments a remark similar to that which he makes at page 417, upon the derangement of the voluntary movements resulting from lesions of the corpora quadrigemina,—that these effects are "probably due to giddiness and loss of sight."

We have derived both pleasure and instruction from a perusal of this work; and we conscientiously recommend it to our readers, as an admirable "Hand-Book of Physiology". We do not much like the arrangement of the subjects; and the style in several passages is not quite so simple as it ought to be for the uninitiated student; but we must say, that in a somewhat careful examination of the book, we have not detected any but venial faults.

Elements of Anatomy. By Jones Quain, M.D. Fifth edition. Edited by Richard Quain, F.R.S., and William Sharpey, M.D., F.R.S., Professors of Anatomy and Physiology in University College, London. 8vo. pp. 363. London, 1848.

The editors have interwoven with the original treatise, the researches of the latest observers; and, in doing so, they have often found it incumbent on them to re-write whole chapters. So numerous and important are the additions, that Dr. Sharpey and Mr. Quain ought to be regarded as authors, at least, as much as editors of the work now before us. The numerous woodcuts, and the marginal summaries, render the text pleasant for reading, and easy to be referred to,—recommendations of no slight value, considering that the minuteness of detail, inseparable from good books on anatomy, is apt to render them heavy and repulsive to those entering upon this department of study.

For clearness and accuracy of description, combined with amplitude of detail, we may safely say, that there is no work in the English language to be preferred to *Dr. Quain's Elements of Anatomy*, edited by Mr. Richard Quain and Dr. Sharpey.

Journal of Psychological Medicine and Mental Pathology. Edited by Forbes Winslow, M.D. Vol. I. 8vo. pp. 662. London: 1848.

We cordially recommend this quarterly periodical to all who are interested in the important, and often intricate, questions which arise in connexion with the abnormal condition of the human mind. Dr. Winslow's literary qualifications, combined with his daily occupation in the successful treatment of the insane, eminently qualify him for the office of editor: and judging from the general excellence of the articles in this volume, we infer, that the staff of contributors is not unworthy of their leader. The papers consist of Analytical Reviews; Original Memoirs; Translations; Trials, bearing upon the medical jurisprudence of insanity; Miscellaneous Notices; and Correspondence. In succeeding Numbers we expect to have frequent occasion, in the "Digest of the Journals", to introduce to our readers valuable information, gleaned from Dr. Winslow's pages.

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[1] Experiments on the Products of Respiration at different Periods of the Day; in London, Edinburgh, and Dublin Philosophical Magazine, vol. xiv. 1839.

[2] Physiologie des Athmens. Karlsruhe: 1845. 8. 60.

1. A Letter to Lord Morpeth, and the Members of the Health, on the Question,—Is Cholera contagious or William Reid, M.D. 8vo. pp. 16. London.

2. The Health of Towns' Journal, and Record of Social No. 1, 2, and 3: containing Papers on Epidemic Indian C Treatment and Sanitary Requirements. By S. Scott A

3. Cholera: its Electrical Origin, Electro-Galvanic Phen Treatment by Isolation and Oxygen Gas. By Henry Ho M.R.C.S. 8vo. pp. 16. London: 1848.

4. Substance of Investigations regarding Cholera Asphyx etc., being Communications from Professor Delpech, and D Montpellier, with Additional Observations on the Disease in and Neighbourhood. By John Lizars, Esq., of Edinburg Edition. 8vo. pp. 77. Edinburgh: 1848.

5. Observations on Malignant Cholera, illustrating the Treatment best adapted to second the Curative Effo vers. By Andrew Buchanan, M.D., of Glasgow. 8vo. pp don: 1848.

6. On the Treatment of Asiatic Cholera. By Archibald Bi A.M., F.R.S. 8vo. pp. 15. London: 1848.

7. A Series of Letters on the true Pathological Nature o and an infallible Method of treating it. By Geor thorne, M.D. 8vo. pp. 64. London: 1848.

8. A Series of Letters on the Impurities and Deficienci being the chief Cause of Cholera; and on the Treatm Premonitory Symptoms of this Disease. By Willia Boddy, Surgeon. 8vo. pp. 40. London: 1848.

9. Symptoms and Treatment of Malignant Diarrhœa, or A lera, as treated in the Royal Free Hospital. By Wi den, M.D., Senior Surgeon of the Hospital. London, 1848.

10. The Cholera at Malta in 1837. From the Italian Brilon, M.D., Physician to the Cholera Hospital at Valetta B. Watson, M.D. 12mo. pp. 178. London.

The expected Advent of Cholera, in an epidemic form, has c legion of dissertations on this formidable malady; and without tion, on our part, to undervalue the philanthropy and qualific many who have undertaken to enlighten the public on the obsc a yet undecided question, viz., the nature and origin of the dis be permitted to doubt whether the majority of the opinions no put forth, have been conceived in a truly philosophical spirit Without a more extended inquiry than has yet been made, int and chemical elements of the blood and secreted fluids of Chol the philosophical inquirer is scarcely in a position to justify ment of any well-founded theory of Cholera. Since its preval 1832, in Britain and on the Continent, much has been done towa clearer views of its causes and mode of propagation, rendering pathology, and arriving at a more scientific, consistent, and le mode of treatment, than had been previously in fashion with m profession. The morbid appearances observed after death in system of the *encephalon*, *thorax*, and *abdomen*, have been, on th form and instructive, as to the changes effected in these organs, of vitality in the blood, and suspended functional influence o But we have yet to ascertain the condition and chemical c *choleraic blood*, *bile*, *urine*, and *intestinal contents*, by a collection of facts: from such observations, much regarding the nature may be adduced. A minute microscopic examination of the nerves must be also instituted, particularly in that form of the

"ganglionic apoplexy," in which the complete suspension of pulmonic chemical action on the respired air, and the consequent blueness of skin, must be looked for in secondary causes and impaired influence of the pneumogastric nerve. If, with these investigations, the medical philosopher unite an inquiry into the particular magnetic and electric states of the earth and atmosphere, under which Cholera attacks are most frequent, we should then obtain, along with a clearer view of its pathology, a more distinct knowledge of its causes, which might ultimately be made extensively applicable to the prevention, and perhaps also, though in a limited degree, to the cure of the disease.

In connexion with researches into the causes and propagation of *this* and other diseases, though not disposed to underrate the importance of the sanitary inquiries lately instituted by Government, we cannot help feeling assured that the beneficial results of many proposed measures have been too much exaggerated, and public hope raised only to disappoint expectation. Some of the sanitary enthusiasts would trace all the physical evils of society to foul air, deficient supply of water, and an imperfect system of civic drainage; and though we duly estimate the utility of improvements in such, to secure the better health of towns, we must not pass unnoticed the more weighty part of the *onus* which deficient and impure food bears in producing disease among a pauper population. We may, moreover, add our opinion, that though the existence of civic nuisances is influential in causing *endemic* and *sporadic* attacks of Cholera, yet their removal can only mitigate, but not prevent, its prevalence, should we be eventually doomed to witness the fresh advent of this disease under those general atmospheric changes and deteriorations which have given it *epidemic* currency in former years.

It is not our intention to enter into a minute critical analysis of the pamphlets before us, but simply to supply our readers, in this and subsequent numbers, with such a brief summary of the contents of those published, and to be published, as will candidly place before them the information communicated by their respective authors. In summing up, we will endeavour to give what appears to be the true pathology of the disease, so far as it has been ascertained.

The principal object of Dr. W. Reid's letter is to examine the infectious or non-infectious character of Cholera; a question to which the author brings, in discussion, an enlightened understanding, ready in its illustrations, and cautious in its deductions. In opposition to the unreserved and sweeping opinion of the Board of Health—"*that Cholera is not propagated by contagion*", we are presented, in the letter before us, with what we deem correct conclusions, drawn from the evidence we at present possess on this subject: "That if the question of the infectious nature of Cholera cannot be unreservedly answered in the affirmative, neither can it be absolutely decided in the negative." The proposition sought to be established is, that diseases which have their origin in natural *endemic* causes, may, under certain favourable conditions of the atmosphere, become so generally prevalent as to be *epidemic*, and become communicable by contact of animal bodies, and of specific infectious matter produced by their living action. Dr. Reid brings forward an apt illustration of this in the example of the Rose or St. Anthony's fire, which, within the last thirty or forty years, became contagious in Montrose, Edinburgh, and the metropolis, though usually classed among non-contagious diseases from time immemorial. It is, from this, evident, that the production of disease by contagion does not preclude its origin from causes independent of animal effluvia; and in respect to Cholera, though not inclined to adopt the extreme view of its non-contagious character, we hold it as a maxim, that it may, on the contrary, be occasionally propagated by contact; but would not recommend strict quarantine regulations as of much utility in prevention, deeming the only sanitary measures necessary to be those

which ensure ventilation, dryness, and cleanliness. Dr. Reid says l
ment beyond approving of opium as the best remedial agent in

In the *Health of Towns Journal* there is little requiring notic
papers on "Epidemic Indian Cholera", by Dr. Scott Alison. T
an intelligent abstract of the information we at present possess
causes, propagation, nature, and treatment of Cholera. Dr. A
posed to consider it a disease of the stomach and bowels,
nervous system, the capillaries, heart, and organs of circulatio
arily affected; and though such cannot denied to be the
instances, the diarrhœa and intestinal discharges must gene
sidered the effect, rather than the cause, of depression in the ne
and organs of circulation. Dr. Alison's observations possess one d
viz., that they describe the disease as consisting of four stag
corresponding modes of treatment are proposed. On this latt
ever, we are much at issue with Dr Alison, who recommends th
of dry heat in place of hot fomentations to encourage perspira
approves of cold water, unless other remedies fail in producin
effect on the stomach. But in the practice of others it has bee
that, in treating Cholera by salt and cold water, the ratio of
much less than under any other system of treatment.

Dr. Holmes' pamphlet contains a very hypothetical theory o
a yet untried mode of treatment. The surface of the body h
the negative pole of a galvanic battery, and the intestinal s
positive pole of the same, by which the respired oxygen of
unconsumed in the production of carbonic acid and the genera
but being determined to another point, by a galvanic current i
in copious acid secretions from the mucous membrane of th
Dr. Holmes' proposed remedies are—to cause a reversion of
galvanic current; and isolation of the patient's bed by means o
conductors, and a hot oxygen bath. These views are not a litt
and as yet untried in practice; though the origin of cholera
bably connected with particular negative electric states of th
causing the abstraction of electricity from animal bodies.

The fourth on the list is a republication of investigatio
Cholera-asphyxia, in 1832, commenced by Professor Delpech
of Montpelier, and continued by Mr. John Lizars of Edinbur
tomical researches of the former, in this country, led to the
in all cases of Cholera, the semi-lunar ganglia, solar and renal
parts of the pneumo-gastric nerves, and sometimes even the p
plexus, are infiltrated and vascular, or in fact inflamed, so a
the functional influence of these nerves in the formation of bl
respiration, and circulation. We admit that these appearances i
of the great sympathetic, form part of the effects which follo
pressions of the exciting cause of the disease, whether this b
negatively electric state of the atmosphere; but if we seek for t
of this formidable malady, it will be necessary to commenc
higher in the chain, and trace the whole series of phenomena
vitality in the blood, with consequent want of power to becon
Mr. Lizars, reasoning on the observations made by M. Delpe
warm, humid atmosphere, predisposing the constitution to d
the whole nervous system, but especially the ganglionic ne
the pulmonary plexus becomes incapable of endowing the lu
to oxygenate the blood, the cardiac plexus of exciting the
on the circulation, the gastric plexus of continuing the pow
the hepatic plexus of influencing the secretion of bile, and th
of giving energy to the kidneys for the secretion of urine. Th
of this deficient nervous energy of important organs, are d
the chylopoietic viscera, torpidity of the cutaneous capill

vascular determination to the ganglionic nerves, and inflammatory spasms of the whole system. The lungs thus become incapable of separating the electric fluid from the air, inhaled at each inspiration; and this, reacting morbidly on the muscles that dilate the chest, reduces the strength and frequency of the respirations, diminishes the quantity of carbonic acid evolved, and renders the blood of the arterial system venous. The symptoms and train of phenomena are considered similar to those of intermittent or remittent fever—an observation fully established by the experience of others.

For the sake of arranging the mode of treatment, Cholera is divided into three stages, exclusive of a stage of reaction. 1. *Ordinary diarrhœa, or premonitory symptoms, raging epidemically, or occurring under epidemic influence, and which, if neglected, runs into fatal collapse.* 2. *Well-marked Cholera.* 3. *Cholera rapidly advancing to collapse.* The first stage is to be treated by confinement to bed, small doses of calomel with colocynth, followed by an astringent draught of one drachm of electuary of catechu, five grains of prepared chalk, half an ounce of the syrup of ginger, one ounce of cinnamon water, and ten drops of laudanum. In the second stage, warm enemata with laudanum, draughts of hot water, sinapisms to the epigastrium, the external application of heat, calomel with small doses of opium and aromatic confection, cold drinks and ice, are recommended. In the third stage, the treatment is to be essentially the same as in the second, but a little more active; and when decomposition of the blood has commenced, nothing can save the patient but injecting the saline solution into the veins. Mr. Lizars is also of opinion that the patient should be kept in the horizontal position during the continuance of the disease, and recommends inhalation of vapour—a practice from which the sufferer derives great relief. The mode of treatment recommended is, on the whole, most judicious, though we may differ in some particulars from the author. We conclude the analysis of his interesting pamphlet with an extract describing the manner in which the saline injection is employed. "It should be used as follows:—let a solution be prepared, consisting of 10lbs. of hot water at the temperature of about 110°, in which is dissolved a drachm and a half of bicarbonate of soda, and half an ounce of the muriate of soda. This solution is to be strained through leather. One of the veins at the bend of the arm of the patient is then to be opened, as in phlebotomy, into which is inserted a common injecting pipe of the dissecting room, and then the elbow put in a basin of warm water to exclude the atmospheric air. The common enema apparatus was employed, the tube extremity of which was adapted to the small dissecting room pipe, and now held under the water in the basin: the syringe was now plunged into the saline solution, and two or three syringefuls pumped out at the extremity of the tube still held under the warm water. The tube was carefully inserted in the nozle of the injecting pipe, and the pumping begun, and performed slowly. After a few ounces were injected, the pulse became perceptible, the breathing stronger, the skin warm, the countenance natural, the eye lost its ghastly sunken appearance, the face became full and plump, and even rosy—old age assumed the expression of youth. The cramps, the restlessness, and the thirst disappeared. It now became critical how much more saline fluid should be injected. As far as my experience goes—whenever animation, or the springs of life were fairly set a-going, then stop; for on injecting too much, the saline solution was pushed through the exhalant capillaries of the stomach and intestines, and killed the patient, by reproducing the disease, of which I have seen many instances. See M'Intosh's *Practice of Physic*, vol. i, page 369, 4to. edition."

Professor A. Buchanan republishes his observations and reflections on malignant Cholera (as it showed itself, in Glasgow, during the year 1832), with a view of being useful to his pupils, and illustrating the applicability of the modern humoral pathology in explaining the phenomena of the disease. His pamphlet is replete with good sense, accurate observation of

phenomena, and philosophic views of the chain of effects devel
progress of a most malignant and untractable malady. It is
remarked, in the preface, that Cholera does not admit of empiric
and that a judicious adaptation of time and circumstances is
render any treatment of it successful. Dr. Buchanan divides
into three stages, according to the nature of the intestinal disch
are, at first, feculent; secondly, albuminous; and thirdly, bilious.
on this classification of symptoms, a suitable theory of the mode o
which will be found of utility to the inexperienced practitioner.
tion, however, to the Professor's classification, which scarcely e
subject, is that it is founded on mere symptoms, and not on the
condition of the nervous and circulating systems; the morbid
which are only manifested by the diarrhœal discharges as mere
second stage is said to be marked by the commencement of the
discharge from the bowels, with concomitant sinking of the pu
the discharge is said by Dr. B. to contain albumen, coagulatin
heat, or by nitric acid; but this assertion is denied by M. Andr
siders the fluid from the bowels to be only mucus secreted in larg
and modified in its qualities; and that it contains neither albume

Regarding the nature of Cholera, Professor B. justly observ
neither gastro-enteritis nor inflammation of the muciparous gla
is it inflammation of the great sympathetic, a doctrine s
Mr. John Lizars of Edinburgh, Delpech of Montpelier, and
Moscow; but it is essentially a disease of the fluids, and an al
tution of the blood, by which it loses its capability of being
In the first, or *diarrhœal period*, opiates with tartar emetic or
cordial diaphoretics, and the warm bath, are the proper remed
second, or *leucorrhœal period*, the free use of opiates, occasional
in a warm bath, the application of hot water fomentations,
allowance of cold drinks, composed of milk, beaten up with a
mingled with water, are the principal means of treatment recom
the *cholerrhœal period*, or stage of reaction, venesection is often
lessen over-excitement; and occasional small doses of calomel,
with the remedies usually employed to moderate febrile act
necessary.

Dr. Billing's remarks on the treatment of Asiatic Cholera, the
with a good deal of pardonable egotism, are shrewd and to th
considers it a febrile disease, of which the cold stage is like th
and ague"; in which he condemns the use of strong stimulan
effects being visible in the stage of reaction. *In fine*, he says,
that I consider Cholera an essentially febrile disease, whether
intermittent, remittent or continued form; that it is not a new d
same described by Sydenham, in 1669, *and subsequently by Fra*
what is recommended in the manifesto of the Board of Health
by Dr. Billing, who thinks that an emetic is useful, as in the
ague, and advises a table-spoonful of the following,—water,
tartar emetic, two grains; sulphate of magnesia, half an ounce;
and given every half hour. Or where the above prescripti
quickly obtained,—half a pint of water, a large table-spoonf
table-salt, and a large table-spoonful of flour of mustard, are to
given in the same doses as the former. The patients are to
drink freely of cold water, and grain doses of *disulphate* of q
with half a dose of the fever mixture first prescribed, are to
the earliest period of the attack. Cold drinks of arrow-root,
with water, may be given to the patient as required.

Dr. Hawthorne's pamphlet, consisting of a series of lett
published in the *Liverpool Mercury*, is addressed more to the pub
profession. Its author, writing in a somewhat magniloquent s

all the dogmatism of an *ex-cathedrâ* opinion, pronounces confidently, in his second letter, that *Cholera is not contagious*, after previously admitting that its progress, at least, had afforded probable proofs of the contrary; and that its capability of being transported by sea had been developed in the years 1818 and 1819. At this time its conveyance from the continent of India to the neighbouring island of Ceylon, thence to the Mauritius and the Isle of Bourbon, next to the Indo-Chinese peninsula and Siam, and subsequently to Java and Cochin China, became a matter of notoriety; though the manner in which it was progagated be yet a question. Whether the transit of this disease from continents to islands, or from one district to another, be ever dependent on communication of the affected with the healthy, or on atmospheric diffusion by particular *miasmatic* or *electric* conditions of the air, is an all important point for determination; for the view taken of the infectious or non-infectious character of Cholera, must be the basis of all sanitary recommendations for the preservation of public health. In matters of this kind, where there is room for doubt, some qualification of the author's opinion would have given us less cause, than we now have, for questioning his judgment on other points where he has pronounced a like unhesitating and affirmative decision. Among such, are his assertions, that large doses of opium are efficacious, and almost a specific in every modification of the disease, and that there is a mode of treating it, which, in a very extensive practice in his own hands, and in the hands of others under his directions, was found, when fully carried out, to be universally successful (p. 14). The professional reader will be surprised to learn that this never-failing remedy is opium, combined with camphor and capsicum. Dr. Hawthorne recommends that ten of these one-grain opium pills, of which he has given the formula, should be administered to patients suffering under the most malignant form of the disease, after having placed the body in a horizontal posture and covered it with blankets. These pills are to be followed by cordials, warm brandy punch, and the application of bags of hot salt, or sand, to the patient's feet and other parts of the body, till free warm perspiration be produced. There is nothing new in this treatment, said to be infallible; but which, however, in the hands of others, has been followed with very different results. Indeed, the Vienna and Paris returns, of the effects of opium in Cholera, show that the rate of mortality was higher under its use than under other modes of treatment. Hot air or vapour baths are condemned as useless, and, with better reason perhaps, the author denounces blood-letting. But while there is much to be condemned in this pamphlet, as an unsafe guide, either to the profession or the public, we are bound, in candour, to admit that it contains some shrewd pathological remarks; among these, the observation particularly struck us as correct, that recoveries, without medicine, from collapse, were ascribable to extreme tenuity of the blood and absence of fibrine;—physiological states of the constitution, that prove unfavourable to coagulation of the circulating fluid in the cavities of the heart.

Mr. Boddy's pages do not call for elaborate notice. Food of bad quality, we are truly enough told, impairs the tone of the system, and augments its susceptibility for receiving the impression of the exciting cause of Cholera; but when the author informs us, that locality and impure air have nothing to do with its developement, and that an active purge may be given and repeated in the diarrhœal or premonitory stage, we withhold our assent, and doubt the author's ability to unravel the complicated chain of morbid phenomena which exist in Cholera.

Dr. Marsden gives a sensible and practical view of the nature and treatment of the disease, as it appeared among the patients admitted into the Royal Free Hospital in 1832 and 1833. This work, then issued to the world as the result of Dr. Marsden's experience of the Cholera, is now published as a second edition, under an expectation that this formidable malady, which the author

names *Malignant Diarrhœa*, may soon epidemically prevail amon
his opinion it is neither contagious nor infectious; but wh ether
comes so is a question, to which the present state of the evid
scarcely justify us in giving a very positive reply. We are therefo
to waive this, and, like the College of Physicians, to maintain
reserve of opinion on an all-important but undecided matter.
has the merit of embodying in his *Treatise* a clear description of
of Cholera, with a rational plan of treatment adapted to his viev
thology. Cholera originates, he thinks, from a poison exciting cer
to determine the circulation to the intestinal surface, and occasio
nical separation of serum from the blood, till the volume of thi
fluid is so seriously diminished as to preclude the possibility o
propelling its contents to reach the extremities, and preserve th
the excretory and secretory organs; while, from the loss of its
too viscid to pass the capillaries, and thus produces vital depres
brain and nervous system. Calomel forms the most essential
agent in the treatment recommended. Dr. Marsden's favourable
its efficacy, in the first or premonitory stage, is confirmed by the
mony to the utility of large doses of calomel in the Cholera at M
given by Dr. Stilon in his book on this epidemic,—a work which,
in our list of publications on Cholera, is of first-rate importan
deserving of most careful perusal by every member of the pro
may eventually have occasion to employ his skill in treating
Before proceeding to analyze the well-arranged contents of Dr. S
we are unwilling to part from Dr. Marsden without noticing
given several *collapsed Cholera* cases restored by saline injectio

Amidst so much discrepancy of opinion, it is refreshing to me
a work as Dr. Stilon's *Cholera at Malta;* for the translation of
the Italian, at the present moment, the professional reader mus
indebted to Dr. S. B. Watson. In this little work, the predispos
Cholera are clearly and philosophically considered, under t
Physical, *Physiological*, and *Pathological*; by which the und
guided to estimate, in due proportion, how much the origin a
tions of the disease are ascribable to general atmospheric co
damp situation, and in what degree they arise from, and are i
age, particular temperament, fatigue, and hard labour, or pre
The uniformity of the anatomical observations, resulting from th
examinations of Cholera patients, is detailed with much precis
appearances in the *head*, *thorax*, and *abdomen;* and *the injecte
neurilema of the pneumo-gastric and great sympathetic nerves*, w
brown colour through their whole extent, is given as confirmat
searches of Delpech and Mr. J. Lizars. Dr. Stilon holds it a
the virus engendered by Cholera obtains *primarily*, or *seconda
in the stomach and intestines, and then describes minutely
characterizing the various stages of the disease. The physiolo
the more remarkable symptoms is next examined and explain
a consideration of the methods of different physicians in the
Cholera, we are made acquainted with the remedies emplo
success in the treatment of this disease at Malta. These
large doses, instead of astringents, for the symptoms of th
stage; and two of our author's practical observations are parti
of remark, as being in complete accordance with our own ex
purgatives sometimes accelerated the stage of collapse; an
latter, opium was frequently injurious, making the patient pas
to the grave form of this stage. Iced water and cold baths we
tried in the severe collapsed state, and were followed by the i
mation of the patients, and marked ease, particularly through

of the intestines, and the region of the stomach. In most of these cases, the use of cold bathing was succeeded by severe reaction; the practical directions regarding which, and the necessary prophylactics for preventing attacks of Cholera, are conceived in a trustworthy spirit of research. We recommend the perusal of this little volume to our readers.

The manifest amount of discordant opinion amongst our authorities,—nay, the complete antagonism between the non-contagion doctrines advocated by the Board of Health, and the institution of quarantine by the Privy Council, is calculated to distract the public mind, shake general confidence, and excite a suspicion that, in the matter of Cholera, and of medicine generally, there can be but little truth, and no certain knowledge. But the sins and incapabilities of individuals, who possess not habits of mind fit for scientific inquiry, must not be falsely ascribed to the state of the profession itself, which, as Dr. Reid has well expressed, "by every day's experience, every succeeding generalization of facts, is insensibly securing for Medicine a more solid, permanent, and enlarged basis, while the hazy atmosphere of hypothesis is dissolving before the clear and sharp horizon of truth." The College of Physicians have greatly reassured the public mind by their sensible and seasonable manifesto, in opposition to the crude circulars and notices of the Board of Health; which, in justice to our profession, we must state, is not a Medical Board.

(To be continued.)

PRACTICAL PHARMACY: THE ARRANGEMENTS, APPARATUS, AND MANIPULATIONS OF THE PHARMACEUTICAL SHOP AND LABORATORY. By FRANCIS MÖHR, Ph. D., and THEOPHILUS REDWOOD. Illustrated by 400 Engravings on wood. pp. 390. London, 1849.

This work consists of adapted and translated chapters from Dr. Möhr's *Manual of Pharmaceutical Technology*,—a work which deservedly enjoys a high reputation on the Continent,—and of original matter by Mr. Redwood, constituting two-thirds of the volume. The following is a short summary of the very varied contents of the work before us. 1. *General Arrangements of the Shop or Dispensary;* including arrangements for heating, lighting, etc.; with a description of the laboratory, store-room, drying-room, and powdering-room. 2. *Special Arrangements, Apparatus, and Operations;* embracing information as to the drying-closet, steam apparatus, distillation, digestion, infusion, vaporization, preparation of tinctures by maceration and by percolation, weighing and measuring, stoppering, tying of knots, luting, casting of various caustics, etc. etc. 3. *Dispensing of Medicines;* viz. mixtures, draughts, drops, emulsions, etc.

To the dispensing druggist, we imagine, this work will supply a desideratum which has long been complained of; and to medical men, who, from choice or necessity, have their prescriptions compounded at home, many of the chapters are likely to prove useful. We would also recommend the book to such practitioners—too numerous a class we fear—as have not yet given adequate attention to pharmacy, and who from their ignorance of, or want of familiarity with, the physical and chemical properties of the ingredients which they order to be combined, embarrass the dispenser, and not unfrequently defeat the aim of their own prescriptions. It is humbling to our profession, that Mr. Redwood should require thus to discourse to dispensing druggists on the "*reading of physicians' prescriptions.*" "When," says he, "a prescription is intended for preparation, the first thing to be done is, to read and understand it. This is sometimes the most difficult part of the dispenser's duty. It requires the exercise of serious attention, quick perception, sound judgment, and prompt decision. The writing in prescrip-

tions is often very bad, and the words are mostly abbreviated; m
language in which prescriptions are written is, in the majority of
imperfectly known to both the writer and the reader. There ar
but a limited number of formal expressions which are common
conveying the requisite instructions, and a knowledge of the
acquired; but the pharmaceutist will not be qualified for his dut
penser, if he possesses only a knowledge by rote of the expre
frequently used in prescriptions. The prescription is intended a
of communication between the prescriber and the dispenser, and a
ance with the language in which it is written is quite as neces
latter as to the former. The dispenser has a two-fold difficulty
with; he must first decipher, and then translate the writing of t
tion. Moreover, he must do this, not only correctly, but promp
stand poring over the prescription for too long a time, it may r
picion on the part of the customer, that either he is ignorant, or t
careless. Nothing should be done that could possibly tend to
confidence of the patient in prescriber or dispenser."—p. 335.

As mistakes and perplexity sometimes arise from the change
been introduced in the *capacity of the pint measure*, we beg to dr
to the following statement. "Medical men sometimes order half
pint of liquid under the impression that these quantities are still
equivalent to f ℥viij and f ℥xvj, whereas the capacity of the pint
f ℥xx. The pharmaceutist has but one safe and straightforwar
pursue in these cases. In the absence of specific instructions to t
his text-book and guide is the *Pharmacopœia*; and, according
thority, the symbols Oi and Oss, are synonymous with f ℥xx and
338, 339.

We quite agree with Mr. Redwood in thinking that when the
unacquainted with the method of forming a pill, he had bette
choice of an excipient to the dispenser. On this subject M
remarks:—"The physician frequently names in the prescriptio
ticular excipient, which is directed to be used. Whenever this
instructions of the prescriber should be carried out if practicabl
always, however, that this is practicable, and then the dispenser
his own judgment. It would be much better that the selection o
in these cases should be always left to those who dispense the m
the prescriber rarely possesses the practical knowledge requisit
him to determine what kind of excipient is required. We fre
two or three soft extracts, which when combined are too soft
being properly made into pills, ordered to be mixed with mucila
quantum sufficiat. In this case, although the dispenser cannot
the letter, yet he may carry out the spirit of the instructions, by
or sugar."—p. 350.

From the extracts which we have given, it will be seen that th
in the estimation of Mr. Redwood—who speaks, we fear, from
data—neglect the study of the Materia Medica and Pharmacy to
tent as to make it necessary, as a matter of routine, for the shopm
and amend our prescriptions. It may be undignified in doctors to
but is it to their credit to be told by Mr. Redwood, that, as
cannot give instructions how this is to be done? The physician
tainly have such a general acquaintance with the more common
tions of the apothecary's shop, and with the physical and chemic
of drugs, as to enable him to write prescriptions correctly, and c
pound them skilfully, if circumstances should ever render this u

The Periodoscope: with its application to Obstetric Calculations and the Periodicities of the Sex. By W. Tyler Smith, M.D. London, Obstetric Lecturer in the Hunterian School of Medicine. 8vo. pp. 47. London: 1848.

The Catamenial Cycle, like the lunar revolution, occupies twenty-eight days; consequently, there are thirteen catamenial, or lunar months, in the year. Dr. Tyler Smith has applied this fact to a novel use in his Periodoscope.

Our readers must first imagine one circle with the twelve calendar months marked out upon it, each month being divided into days, and the days of the month being numbered five, ten, fifteen, etc., for the convenience of reckoning. On the outside of this circle, which is about three inches in diameter, there is another circle, somewhat larger in size, than the first. This larger circle is divided into the thirteen catamenial cycles which make up the year. The inner circle is finely engraved on card, and fixed in the centre by a silver rivet, which admits of a circular movement, within the outer, or catamenial year. Here we have at once a simple and efficient mechanism for reducing catamenial to calendar months, and *vice versâ*. The first five days of each catamenial cycle are marked, as the days during which the catamenial flow takes place; while the remaining twenty-three days constitute the interval. The following will illustrate the use of the periodoscope, as far as the catamenia are concerned. Suppose any female to have the catamenial secretion commence on the 1st of December; if we turn the moveable central disc so as to make this date correspond with the commencement of a catamenial period, we then have, for a whole year, the dates pointed out at which the catamenial flow will happen. Indeed, this is true not only for a whole year, but for the whole period of life during which the catamenia continue. As long as the catamenia remain regular, so long will the periodoscope be a perpetual Calendar of this function.

The duration of pregnancy is considered by the best authorities to comprise ten catamenial cycles, or two hundred and eighty days. The periodoscope, therefore, has upon the outside of the catamenial year, a segment of a third circle, consisting of ten catamenial cycles, or the term of natural gestation. An arrow is engraved at the commencement of the two hundred and eighty days, and another arrow at the termination of this period upon the scale. Now, suppose any woman to have conceived on the first of January, all we have to do is to turn the inner disc so as to make the arrow at the beginning of the parturient scale point to that date, when we have immediately the other arrow pointing to the date at which parturition may be expected. We should observe that Dr. Tyler Smith has constructed the periodoscope on the principle that impregnation generally occurs immediately after the catamenial flow has ceased, and that parturition comes on, or the changes which foreclose labour appear, on the commencement of the tenth period after conception, exclusive of that period subsequently to which impregnation occurred. However, whatever date the accoucheur may reckon to or from, the periodoscope is equally serviceable, as the calculation may be commenced from any date.

But not only is the scale of forty weeks useful in this manner; the measuring rod of pregnancy, to speak figuratively, is also divided into its ten catamenial months, so that for any given pregnancy we have marked out the termination and the dates of the catamenial times of pregnancy, at which dates it is well known that abortion and various accidents, with all the other phenomena of gestation, principally take place. At any day during pregnancy, at which a practitioner may be called on to prescribe, he can observe at a glance whether his patient is at a catamenial date, or in the interval between two dates; information which in many cases becomes of extreme value.

Thus the periodoscope, as its name implies, gives a perfect view of all the periodicities of the sex, whether during the unimpregnated or impregnated

states, and this not of one woman alone, but of every subjec
periodicities it may be applied.

The instrument must be considered not only as a calculating m
as a felicitous diagram of all the sexual functions of the human
a mere diagram, it is to the sexual periodicities what a moving
physical astronomy. As a new instrument, it is of importance f
venience of the practitioner in individual cases; and it will p
highest value as a means of determining much that now remai
respecting the periodicities to which it refers, such as the
pregnancy, the times at which abortion occur, etc. For inst
accoucheurs have the records of hundreds, and even thousands o
taining the dates of quickening, the last menstration, parturiti
which to be made available would require a formal sum in arithm
case. The difficulty of handling a large number of cases by t
method is such, that the task is seldom attempted. With the p
one turn of the instrument is all that is required, and the prom
of the most complex case are instantly brought into view. The
will both offer greater facilities for obstetric records, and greater
applying these records to practical purposes. It is in these po
that we consider it of the highest importance. The substance
sent work originally appeared in the *Lancet*, as a part of Dr. T
very able and highly original course of Lectures on Parturitio
trics, recently published in that journal.

Contributions to the Pathology of the Kidney. By Wm. T
M.D. [Wood-cuts.] pp. 54. Edinburgh; 1848.

Without pronouncing as to the accuracy of the author's obs
may say, that the memoir bears internal evidence of proceed
accomplished and pains-taking pathologist; and as the work o
we now direct attention to it. The illustrative cases are not th
able part of the essay. We do not admire Dr. Gairdner the
speaks guardedly on disputed points. In the course of the inqu
he is now engaged, we hope that he may be able to form some
the anatomical relations and functions of the Malpighian bodi
the author's promised researches on the urine, and on the patl
diseases of the Kidney, we, in the meantime, transcribe th
summary of the present memoir.

"1. By far the greater part of the pathological lesions of the
from or are connected with, the exudation of oleo-albuminous
the interior of the tubes and epithelial cells.

"2. The oleo-albuminous exudation is probably often prec
tainly occasionally accompanied, by vascular congestion; b
quantity of exudation is considerable, more or less complete
the vascular system invariably occurs. This is a secondary res
struction of the *tubuli uriniferi*.

"3. The oleo-albuminous exudation occurs in two chief form
Universal infiltration of the tubes throughout the organ; and
tration of particular sets of tubules, the rest remaining free
In the latter mode arises the granulations of Bright.

"4. There is no essential anatomical difference between the
the kidney which are the result of chronic processes, and tho
been considered as the result of inflammation.

"5. The capillary vessels of the kidney are subject to spontar
tion (unaccompanied in the first instance by any visible lesion
giving rise to the peculiar affection which I have called the *u*
tion. This obliteration of the vessels is probably in all cases
stage of congestion.

"6. The consequence of the waxy degeneration is thickening and varicose dilatation of the tubuli, throughout the organ.

"7. The tubes of the kidney are subject to contraction and obliteration, in consequence of the desquamation of their epithelium; a condition resulting in atrophy, and complete disorganization of the organ.

"8. The desquamation of the epithelium occurs very frequently in all the other diseased conditions of the kidney. When sufficiently long-continued and extensive, it produces contraction, and this indifferently whether exudation be present or not. It is sometimes accompanied by vascular congestion in every stage of its progress.

"9. The earlier stages of the exudations can only be discovered by means of the microscope. The progress of the waxy degeneration, on the contrary, is best traced by the unaided eye. The desquamation of the epithelium is only to be discovered with certainty by means of the microscope, and is particularly apt to escape attention, under all circumstances, if the *kidney* only, and not the *urine*, be looked to. It results that careful investigation, both by the microscope and the naked eye, both of the kidney after death and the urine during life, are indispensable to enable the pathologist to determine with exactitude the presence or absence of disease."

THE OBJECTS OF MEDICAL STUDY, AND THE SPIRIT IN WHICH THEY SHOULD BE PURSUED: being an Introductory Lecture delivered at the Medical School attached to the London Hospital, October 2, 1848. By W. B. CARPENTER, M.D., F.R.S., etc. [From the *London Medical Gazette.*] 8vo. pp. 15. London: 1848.

We strongly recommend this Address, not only to those on the threshold of their medical career, but to all our professional brethren. It may stimulate them to love and cultivate their profession, not only as affording an honourable subsistence, but as furnishing one of the noblest fields for scientific investigation, and the exercise of Christian philanthropy. Like everything which has proceeded from the pen of Dr. Carpenter, the composition is clear, forcible, and elegant.

BRITISH AND FOREIGN MEDICAL REVIEW. Edited by JOHN FORBES, M.D., F.R.S. Vol. XXV.: being a General Index to the preceding twenty-four volumes. pp. 303. London: 1848.

Most of our readers are aware that at the close of 1847, the *British and Foreign Medical Review* (of Dr. Forbes), as well as the *Medico-Chirurgical Review* (founded and long edited by the late Dr. James Johnson), ceased to exist; and that in their room, and as their representative, the *British and Foreign Medico-Chirurgical Review* appeared in January 1848. The work before us is an elaborate index to the complete series of the first-named periodical. To all who cultivate the literature of their profession, we cordially commend this index, as affording an admirable guide to the works both of British and Foreign medical authors, published between 1837 and 1847. It is calculated to be of much use even to those who do not possess the Review, as it will direct them to the particular volumes of it, or of other works which they may require to borrow from such public or private libraries as they have access to.

CRITICAL DIGEST OF THE BRITISH AND FOREIGN MEDICAL JOURNALS.

ANATOMY AND PHYSIOLOGY.

STRUCTURE OF THE VITREOUS HUMOUR.

In a paper in the *Dublin Quarterly Journal of Medical Science* for August 1848, Mr. William Bowman, after noticing the researches of Pappenheim,[1] of Brücke,[2] and of Hannover,[3] on the internal construction of the vitreous body, as disclosed by treating it for a certain period with solutions of carbonate of potass, of acetate of lead, and of chromic acid, and then making careful sections of it in various directions,—gives a precise and accurate account of his own examinations of this part in man, and in many of the inferior animals. From these researches we have extracted the following points.

In man, the vitreous humour, exposed to the action of dilute chromic acid for a year, and then sliced, displays a series of alternate light and dark layers, for the most part parallel to the outer surface. These extend inwards about one-eighth or one-fourth of an inch; and in front seem to run up to the suspensory ligament of the lens, and to the posterior capsule. More internally, there was evidence of small canals traversing the vitreous body in a central direction; while in its middle region there was an irregular cavity, apparently formed by breaking up of the tissue.

Mr. Bowman then adverts to the appearances produced in the vitreous body by bringing it into contact with solution of acetate of lead, according to the method of Brucke. In these experiments, the fresh eyes of mammals were used. The latter author placed the entire globe, or at least the entire vitreous body, in the solution; and on finding a very beautiful system of concentric layers of precipitate, parallel to that surface, (formed after a certain period of immersion), concluded that they arose from, and demonstrated the existence of, a true system of concentric membranes in the substance of the vitreous body,—the precipitate, which occasioned the white colour, being, he imagined, stopped in its progress inwards by the membranous sheets successively encountered.

Mr. Bowman, however, not feeling satisfied that this conclusion was ultimate one, repeated and varied the experiments, by exposing to the action of the salt of lead, portions of the vitreous body previously cut in various directions,—and in all instances found the layers of precipitate disposed parallel to the surface, whether that surface were the hyaloid, or one formed by the knife. The necessary inference from this interesting fact appears to be, that this elegant deposit of the precipitate, in distinct layers, one within the other, is to be ascribed to some physical cause connected with the phenomenon of imbibition, and not to any pre-existing structure or arrangement of membranes. Of this cause no explanation can be afforded by the laws of endosmose, as at present known.

Mr. Bowman also describes the appearances produced in the vitreous body of a mature human fœtus, by the prolonged action of dilute chromic acid, and which are among the most interesting of the whole. In the central region of the yellow spot, a cup-shaped evolution of the retina

[1] Specielle Gewebslehre des Auges. Breslau: 1842, s. 182.
[2] Müller's Archiv., 1843, s. 346, and 1845, s. 130.
[3] Entdeckung des Baues des Glaskörpers. Müller's Archiv., 1845.

vitreous substance does not enter. The vitreous substance also exhibits a fibrous radiation from the hyaloid canal (that extending from the entrance of the optic nerve to the back of the lens and conveying branches from the central artery and vein) towards the hyaloid surface, countenancing the opinion of Hannover, that the human vitreous body is formed in segments comparable to those of an orange. In the coagulated vitreous of the human fœtus, Mr. Bowman finds an elegant fibrous structure, like that of the enamel pulp.

The author attributes no value to the aranoid evidences of structure afforded by congelation of the vitreous body. Mr. Bowman then explains the results of his observations on the vitreous body, in birds and fishes; and concludes that, in the latter especially, there is good ground for believing that it contains a true system of lamellæ, proceeding from the junction of the choroid and iris, to the lens, and contributing to the mechanical support of this large and solid part in the eye of the fish.

The paper is illustrated by sixteen wood-cuts, for which we must refer the reader to the original memoir.

EARLY PREGNANCY AND INFANTILE MENSTRUATION.

In the *London Medical Gazette* (p. 751), for 3d Nov. 1848, Mr. John Smith publishes a recent case of EARLY PREGNANCY. It is interesting, not only from the extreme youth of the mother, but from the fact of her having borne a living and tolerably healthy infant. The following is Mr. Smith's narrative:—

"At the Coventry Assizes of August 1848, Julia Amelia Sprayson preferred a charge of rape against her uncle, James Chattaway, who was convicted of the assault, and sentenced to two years' imprisonment and hard labour in the House of Correction. The girl was far advanced in a state of pregnancy, and as it is of rare occurrence for conception to take place at so early an age as *between eleven and twelve years*, many surmises were expressed by the gossips as to what would be the probable issue. She continued in good health up to the day of delivery, which took place on the 10th September 1848. In the early part of the morning she became restless and uneasy; and from the hour of 11 A.M. slight pains occurred at irregular intervals, until about 5 P.M., when it was evident that labour was rapidly advancing. On being sent for soon after, in consequence of the absence from town of Dr. Dewes, who had been engaged to attend her, I proceeded to make an examination, when I found the pelvis of average dimensions, and the os uteri about the size of a shilling piece; but as the parturient throes were active, and returned every eight or ten minutes, it appeared prudent to remain until the case had terminated. Nothing remarkable supervened during the progress of the labour, except that it was of unusually short duration. From first to last she was not more than ten hours ailing, while the period of actual labour was not extended beyond four hours, and this would have been further shortened but for the smallness of the external outlet. The subsequent symptoms were just as favourable as the labour had been short. The lochia ceased after the lapse of a few days; the mammæ became duly developed, and the secretion of milk was so copious as presently to suggest to her mother the idea of seeking for a situation as wet nurse. The infant at birth was long, slender, and emaciated, but rather below the average size, and in many respects may be said to have borne a striking resemblance to the offspring of mothers who had been imperfectly nourished during pregnancy. It did not occur to me at the time, either to place it in the scales, or to take its admeasurement, but at the time of writing this report (23d Oct. 1848), it is 8½ pounds in weight. The present weight of the mother is 104½ pounds. When she had so far recovered as to take a share in domestic avocations, it seemed advisable to pay her an early visit, to effect if possible some further information than what had transpired in court, with a view of establishing

some data as to the period of utero-gestation; and although foiled appointed with the result of this part of the investigation, some pa of interest were readily obtained. She was rather of prepossessing ance, of fair complexion, with brown hair and dark grey-eyes; more by far than is usually witnessed at her age, her figure being tolerabl well set and proportioned, and her height being rather more than and notwithstanding her casually childish manner, there was that ness of expression which betokened a more than ordinary develop character. On inquiry her mother assured me that she began to m when *ten years and six weeks* old; and it was distinctly ascertai there had been a regular return of the catamenial discharge, in s profuse quantity, up to the period at which conception took place. had lost her father about two years ago, and that she might not be to her widowed mother, had been in residence with her uncle, w weaver at Foleshill. This unhappy man, who proved her seducer, forty-seven, living with his wife, to whom he had been married tw years, and by whom he had had a family of two or three children, was taught to weave at a handloom, which stood in the same a in which her uncle pursued his daily employment; and here it wo that familiarities arose which issued at length in criminal intercou latter took place for the first time about the middle of November was allowed to be repeated on four occasions at weekly intervals; catamenia had appeared during the last week of that month, an recur in the Christmas week, she dated conception from the latt No communication was made to her relations of what had transp six months had elapsed, when her situation became too prominen further observation, and then it was that arrangements were made ing her under the maternal roof; and means were taken for deliv seducer into the hands of justice.[1] The most rigid inquiry failed ing any farther particulars that could be at all relied on as authe mation. . . . I have been at the pains of consulting the regist her birth and baptism. The former bears the date of February and the latter March 7th, of the same year."

Early Pregnancy.—In connexion with the above, the followi cases of early pregnancy may be interesting to many; the more e present, when we may expect to hear of similar, or more remark occurring in those continental cities which have lately been th revolutionary license. That the aptitude of the human female tion at a tender age is greater than is commonly imagined, we may the fact that during national convulsions (in which the bonds of and decency have been broken), cases of early pregnancy have be to be of more frequent occurrence. During the revolution in Fra close of the last century, several instances occurred of females of even below that age, being received, in a pregnant state, into th at Paris.

1. Sir Everard Home says, "I have met with corpora lutea i fourteen, and know of two instances of girls still earlier, one at t other at twelve."—*Phil. Trans.* 1819, p. 61.

2. Montgomery (Dr. W. F.), says, that "the earliest instan

[1] Sexual intercourse with a girl under ten years of age is a capital crime, violence has been used; but a different punishment from death is assigned to the child be above ten, and yet under twelve; above twelve, *consent* is le (9 Geo. IV, c. 31). Such is the law of England. In Scotland the crime is rap under twelve; but is not punishable by death however young she may be (5 Why is there a difference in the criminal law of the two parts of the Un regarding a matter which could be so easily adjusted?

nancy known to him, was that of a young lady who brought forth twins before she had completed her fifteenth year."—*Signs and symptoms of Pregnancy*, p. 163. Dublin: 1837.

3. Robertson (Mr.), of Manchester, mentions a case which occurred in the practice of Mr. R. Thorpe. It is thus quoted from the *Edinburgh Medical and Surgical Journal*, vol. xxxviii. p. 231, by Dr. Montgomery:—"She had been employed in a cotton factory, and was represented to have become pregnant in her eleventh year. Mr. Thorpe and the late Dr. Hardie were at the trouble of examining the registers of her birth and christening, and fully satisfied themselves that she had really conceived during the eleventh year of her age, and that at the time of her delivery she was only a few months advanced in her twelfth year; her figure was that of a well-grown young woman, with fully developed mammæ, and it was ascertained that she had menstruated before she became pregnant."—*Op. cit.* p. 162.

4. Rowlett (Dr.), of Waisborough, Kentucky, reports, in the *Transylvania Medical Journal*, vol. vii. p. 447, the case of Sally Dewease, born 7th April 1824, in the county of Butler, Kentucky. "She began to menstruate at a year old, and the pelvis and breasts became developed in an extraordinary degree: she continued to menstruate regularly up to 1833, when she became pregnant, and on the 20th April 1834, she was delivered of a female child, weighing seven pounds and three quarters. At the time of publishing the case the child weighed eight pounds and three quarters, and the mother 100 pounds, and was four feet seven inches in height."—(As quoted by Montgomery, *Op. cit.*, p. 162.)

5. La Motte delivered a girl who had not completed her thirteenth year, and who had never menstruated.—(*Traité des Accouchemens*, Obs. xxiii. p. 52, as quoted by Montgomery, *Op. cit.*, p. 163.)

6. Ryan (Dr. Michael), knew of a female pregnant at 12½ years of age.—*Medical Jurisprudence*, p. 242. London: 1836.

Infantile Menstruation.—The following are a few curious instances, some of which certainly may be considered as puberty at an infantile age:—

1. Embling (Mr.), in the *Lancet* for January 29, 1848, gives the following case:—At the date when the account was published, the child was three years old, and had during some preceding months menstruated regularly. The mammæ and nates were as fully developed as in an adult of twenty; the labia, etc. were like those of a mature young woman; the hymen was perfect; the vagina anteriorly was of large size; and on the pubes there was a slight growth of hair. The countenance, appearance and gait were in miniature those of an old woman. At her menstrual periods, she suffered the uterine, lumbar, and other pains common in women capable of utero-gestation.

2. Dieffenbach (Dr.), of Berlin, in *Meckel's Archiv für Anatomie*, etc., 1827, p. 367, relates a case of early menstruation in a child nineteen months old. It was at birth of the natural size, but after the first month began to grow rapidly. In her ninth month she was as large as a child a year and a half old; and about this time a discharge of blood from the vagina was observed. At the end of two months a more copious discharge took place, which was accompanied with an increase in the size of the mammæ, and the appearance of hairs on the genitals. The same phenomenon recurred at fourteen, and again at eighteen months. At the time of the report the mammæ were large, and the genitals were largely developed and covered with hairs. Nothing was remarked in her mental disposition different from other children of the same age, and there was no indication of sexual desire.

3. Catals (Dr.), of Adge, attended a little girl of six years old, who was affected with a spasmodic cough, colic, headache, and epistaxis, which recurred every month. With other remedies which this condition indicated, he applied leeches to the calves of the legs. A discharge of blood from the uterus super-

vened, which was preceded by a febrile state. These phenomena, nied with some enlargement of the mammæ, pain in the lumbar re itching of the genitals, returned regularly every month, and las days. (*Journal de Médecine et de Chirurgie*, par Corvisart, Leroux, t. xi, p. 37, as quoted by De Boismont, in his work, *De la Menstru* 23. Paris, 1843.)

4. De Boismont (M. A. Brierre), op. cit. p. 35, relates, on the au M. Le Beau, the case of Matilda H., who was born at New Orleans with the breasts and genitals as perfectly developed as in a girl o years. The menses appeared regularly each month, from the age years. They continued three days; and were as copious as in woman. At the age of four years, when the report was made, she formed, and of handsome appearance; the mammæ were of the size orange; and the pelvis seemed as large as in a child of eight ye health was excellent. (From *Annal. d'Hygiène*, t. x, p. 484.)

5. Carus (Dr.), of Dresden, mentions the case of Christina There the mountains of Saxony, of parents of a weak constitution. She w a year old when she began to grow rapidly. At the end of the seco month the catamenia appeared, and continued to flow regular month. The mammæ were firm, like those of a strong girl of 16; was stoutly made; and the genital organs were covered with d hair. Her intellectual functions, tone of voice, and physiognomy, of a child three years old. (*Allgemeine Zeitung für Chirurgie*, as *Edinburgh Monthly Journal of Medical Science*, p. 1050. 1842.)

6. Whitmore (Mr. W. H.), of Cheltenham, communicated to th *Journal of Medicine* for July 1845, an account of the case of a menstruated regularly, at intervals of three weeks and two or t from a few days after birth, until the age of four years and som when she died. The development of the body equalled that of a 11 years of age. The mammæ were unusually large; the mons v covered with hair; the labia pudendi more sparingly so. In the her periodical ailments, she would enter into the amusements of her own age; but when she was indisposed, she was exceedingly and would withdraw from all her playful occupations.

7. Lange (Dr.), of Dantzig, relates a case in which menstruation a the eighteenth month, and continued up to the age of two years case was reported. The general health was unaffected in the int vided the discharge took place at the regular periods. The breast tal organs presented no remarkable appearance, but experienced in temperature and size at each menstruation. (*Caspar's Wochens* 3, 1840.)

8. Gaunie (M.), of Dijon, was acquainted with the case of a child years, who had menstruated regularly since she was one year old. ral health was good. There were no premonitory symptoms, exc feeling of tension in the hypogastric region. There were no ex of puberty. (*Journal de Médecine et de Chirurgie Pratique.* Paris.)

In addition to the above cases, others have been recorded, in w charge of blood, often accompanied with some enlargement of took place from the genital organs soon after birth. It seems pr ever, that the hæmorrhage might have arisen from other caus establishment of menstruation; and that the enlargement of t may be due to the sympathy which exists between them and organs, independent of sexual aptitude. Of this kind are, prob others, the cases recorded by M. Mallat in the *Gazette Médica* and by Dr. Cameren in the *Medicinisches Correspondenz-Blatt*, a *Gazette Médicale*, p. 248. 1845.

THE INGESTION OF HICCUP.

In "Notes from a Practitioner's Day-book," now appearing anonymously in the *Provincial Medical and Surgical Journal*, occur a variety of good remarks: such as the following, on hiccup, in the Number for November 15th, 1848.

"In the convulsive movement of hiccup, the diaphragm is depressed; the larynx is raised; and the glottis is closed. What would be the effects of these conditions? The depression of the diaphragm would tend to expand the cavity of the chest; but the glottis being closed, no air can enter the lungs. The two extremities of the œsophagus are, however, still open; and if the hiccup be strong enough, air will enter the œsophagus at both ends. If a person will make a prolonged voluntary effort of the conditions which occur in hiccup, he will find a portion of air sucked, as it were, into the œsophagus from the pharynx. Now, spasmodic hiccup is a reflex movement, excited, in general, by gaseous irritation of the stomach: under these conditions, the hiccup will suck the air of the stomach into the lower extremity of the œsophagus. This, then, is the intention of hiccup,—to pump off the air of the stomach. The movement of the hiccup sucks the gaseous contents of the stomach into the lower extremity of the œsophagus; and an inverted action of the œsophagus propels them upwards, and discharges them at the pharynx."

ON THE COLOUR OF THE HAIR.

In the *Medical Gazette* for November 17, 1848, Dr. GRIFFITH states that the appearance of pigment-cells in the hair, as seen under the microscope, is deceptive; and that this appearance results from a number of air-cavities existing in the medullary portion of the hair. The air refracts the rays of light beyond the field of the microscope, and they appear black, with generally, however, a white spot in the centre. He considers his statement proved by the following observations:—

1. If a piece be cut, transversely, from the centre of the hair,[1] and this be digested in warm water or alcohol, the hair becomes very transparent; and, by this means, all the air-cavities may be filled with the water or spirit,—nay, if the piece of hair be immersed in oil of turpentine, and warmed, the fluid may be seen under the microscope to enter the cells, and the air to escape in bubbles at the ends. All appearance of the pigment then vanishes; but traces of the cell-wall of the medulla are still faintly seen,—they not being of the same refractive power as the medium in which they are immersed.

2. If the portion of hair be removed from the water, spirit, or oil, and allowed to dry, the fluid evaporates, and the air may be seen under the microscope to enter and restore the original appearance. On preserving specimens of hair in Canada balsam, the cells are frequently filled, in parts, with the balsam, especially at the extremities.

3. If the hair be bruised in an agate mortar, it becomes flattened out, resembling a shred of membrane, the pigment appearance being completely destroyed.

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[1] That of the rabbit, or some other animal in which the medulla are large and distinct, is the best.

PRACTICE OF MEDICINE AND PATHOLOGY.

BELLADONNA IN INCONTINENCE OF URINE, ESPECIALLY THE N INCONTINENCE OF YOUNG PERSONS, AND OTHERS.

Several interesting papers on this subject have recently appea French journals. In an article in *L'Union Médicale* for October M. Trousseau advocates the claims of Belladonna as a remedy for incontinence of urine,—an affection which often baffles the skill c men. It has been successfully used for several years by M. Bretc Tours), but the treatment has not become generally known.

The mode of administering the belladonna is in the form of pills, of a centigramme (about the sixth of a grain) of the powder, a centigramme (a twelfth of a grain) of the extract. M. Breton cultivates the plant for his own use) prefers the powder of the in consequence of the uncertainty of its strength, M. Trousseau powder of the leaves. If the child is unable to take pills, he powder in doses of half a centigramme, with gum-arabic and suga is given every night at bed-time during a week; and, if the incon urine do not cease, the dose is increased to two, or even three pill affection has ceased during a week, the medicine is omitted for thi days, then again resumed for a week; and so alternately discon periods of increasing length, and resumed for a week, for at least

The reason which M. Troussean assigns for the long continuar use of this remedy, as practised by M. Bretonneau, is founded on the of many chronic diseases to recur, after being apparently cur respect to the *modus operandi*, M. Trousseau says: "I have often what idea we may form of the mode of action of belladonna in t which occupies our attention. It has seemed probable to me that give the following explanation. During sleep, and by a cause physiologists have not yet discovered the mechanism, there is erethism of the genital organs. Young children, youths, adults in of their age, are almost always in a state of erection during sleep. reasonable to suppose, that a state of excitement of the same kind in the bladder, and produce so powerful a contraction of the muscul that organ, that the sphincter cannot oppose sufficient resistance? understand how belladonna, in diminishing the contractility of th puts a stop to the nocturnal incontinence of urine."

This explanation of the *modus operandi* of belladonna in Enuresi seems to us very hypothetical, and certainly by no means gener cable. We object to the explanation,—first, because the sympt most troublesome in weak and anæmic children, in whom we m that there is less tendency to the state referred to by M. Trousseau because we have found general tonic treatment, and small do Tincture of Sesquichloride of Iron and Tincture of Cantharides, oft rapid benefit; and, third, because the affection commonly underg taneous cure after the second dentition, and almost invariably when there often is, no doubt, an increased turgescence of the gen apparatus.

In making these remarks, we do not wish to discourage the rea London Journal of Medicine from trying this method of c appears by the concurrent testimony of Trousseau, Bretonneau, Tours), and Anglada (of the same place), to be really useful; and says (*Union Medicale*, 26th Oct. 1848, p. 306), that many years a neau mentioned to Guersent senior, Blache, and himself, the produced by belladonna in the incontinence of urine of childr

frictions of belladonna over the hypogastrium, as a remedy for the vomiting of pregnant women. It appears from a discussion which has arisen as to the priority in this practice, that whoever was the first to employ it, M. Morand was the first to make it public, in a book published in 1844, entitled, *Mémoires et Observations Cliniques de Médecine et de Chirurgie.* He seems to have made this discovery accidentally. A child affected with hooping-cough came under his care. He prescribed for it, for some time, the syrup of belladonna of the French codex, when the mother of the little patient complained that her son passed much less urine, and that, contrary to his custom, he did not even moisten his linen during the night, since he had been using the syrup.

STRYCHNIA (IN PARAPLEGIA) PRODUCING HALLUCINATIONS.

The *Gazette des Hôpitaux* for October 7, 1848, contains the following account of unusual effects produced by the administration of Strychnia, in a case of Paraplegia.

A young female, 17 years of age, was admitted into the Hôtel Dieu in January last, with symptoms of incipient typhoid fever. Invagination of the intestines (successfully treated) supervened, which was followed by a severe attack of erysipelas of the face. Her convalescence was tedious. When about to leave the hospital, she was seized, about six months previous to the date of this report, without any known cause, with loss of power in the lower extremities, which increased to such an extent as to render walking impossible. This attack of paraplegia was attributed to chronic myelitis, and blisters and cauteries were applied along the spine, without any evident result. M. Vigla (under whose care the patient was), then determined to try the effect of strychnia, the good results of which, in similar cases, he had already observed. Under the influence of this remedy, a sensible improvement was soon perceived; slight tetanic twitches were observed in the limbs, and the patient has now so far improved, as to afford some grounds for expecting a perfect cure. During the progress of the case, however, several curious and unusual phenomena have been observed.

M. Vigla had gradually increased the dose of strychnia to the enormous dose of three centigrammes (about half a grain) a day, without obtaining any result of importance, when he was led to think that the pills, which had been prepared for several days, had lost their efficacy. He therefore prescribed newly made pills, and ordered the patient to take only one centigramme (about one-sixth of a grain) each day; but no effect was produced. He then ordered the same quantity to be taken night and morning. This, however, produced symptoms as violent as those which would ordinarily arise from the administration of the two doses at once. It is remarkable, that one centigramme, given in two doses, produced the same symptoms, although less strongly marked, viz., very violent twitchings, well marked trismus, congestion of the face, etc.

M. Vigla adverts to a well known fact, but to which sufficient attention is not paid in practice, viz., the difference in strength between the last dose of a prescription, and the first dose of a repetition of the same, when powerful medicines, such as strychnia, are employed. This difference is so remarkable, that a dose of the latter will often produce much greater effects than three or four times the quantity of the former. Hence, when repetitions of powerful medicines are prescribed, cautious observation of the effects is required. Probably by contact with the air, the substance loses part of its energy; because it has been observed, that pills prepared with the same quantity of strychnia from the same specimen differed in potency.

A second very remarkable circumstance in this case is the nature of the phenomena exhibited. The first attacks showed much analogy to hysteria. Those which happened more lately have lost this character, so as to resemble

the usual manifestations of strychnia, viz., slight tetanic affections the earlier attacks, the patient experienced hallucinations. In n works which profess to treat of the therapeutical or physiologica strychnia, have we seen hallucinations mentioned as resulting medicine. But when we consider the *modus operandi* of strych occurrence seems readily explained.

Strychnia acts thus:—the voluntary muscles are first affected; administration of the medicine be carried too far, and if the d strong for the individual, the nervous system of organic life als effects. Respiration and circulation are altered in their due relati other, and a true state of asphyxia supervenes. This is just what in the patient under observation, in whom the hallucinations wer with congestion of the face. But hallucinations have been shew from either a sanguineous congestion, or a congestion which ma nervous. The latter need not be spoken of here. But the i sanguineous congestion of the brain in producing hallucinations called in question. A young man in perfect health, employed at t can at pleasure produce complete hallucinations by suppressing for a moment, and making a violent effort, during which congest face takes place.

In the present case we do not attempt to give any other explana production of hallucinations in the patient when under the i strychnia. But the fact is not the less curious, especially as it ha mentioned by any of the numerous authors who have treated of t logical and therapeutical action of strychnia.

In connexion with the above abstract of the paper of M. Vigl mention that M. Moreau (of Tours), in his work *du Hachisch, et ation mentale*, Paris, 1845, mentions cerebral congestion, resu narcotics or other causes, as one of the states favourable to the pr hallucinations. Together with other cases illustrative of the poin to that of Nicolai, the bookseller of Berlin, in whom hallucination after the omission of his customary evacuations of blood, and left these were re-established. Were it necessary other authors mig to support this view.

SURGERY.

TREATMENT OF HÆMORRHOIDAL TUMOURS.

A new method of treating hæmorrhoidal tumours has lately been some surgeons of most extensive practice. The mode of treatmen we refer, was first described as applicable to one particular form case, by Dr. Houston, in the twenty-third and twenty-sixth volu *Dublin Medical Journal*, March 1843, pp. 94-119, and Septembe 32-49. He there expressed a hope that the proposed plan migh applicable to other forms of hæmorrhoidal tumour; and this a now appears likely to be fully realized. A pamphlet (being the r paper in the *Medical Gazette*) upon the subject, by Mr. Henry Le Surgeon to King's College Hospital, containing the details of se successfully treated, is now before us. The advantages of the differe are considered by Mr. Lee.

The removal of hæmorrhoidal tumours, either by ligature or observes the author, "affords, when it can be had recourse to with an easy and effectual remedy for the disease. But there are case the common mode of operating is not unattended with danger; frequently happen that a patient wishes 'something to although he is unwilling to submit to the pain and inconvenienc the ordinary operation. It will also occasionally happen, from s ality of the constitution, either natural or acquired, that health

inflammation will not take place after a wound, however trifling, of the rectum. In such cases, the inflammatory action, not being circumscribed by the healthy effusion of lymph, is not confined to its intended work of reparation; and, instead of repairing the injury that has been done, becomes itself a new and formidable disease. This termination to the operation for the removal of piles, is, unfortunately, too well known to require farther notice; but another result occasionally presents itself, which has not received the same attention from the profession, nor been so satisfactorily accounted for."

Cases are then given by Mr. Lee, in which pus was distinctly traced in the course of the hæmorrhoidal veins, and in which secondary abscesses proved fatal. From these cases, Mr. Lee concludes that it is not always safe to place a ligature upon the enlarged veins of the rectum; and that, in the way the operation is usually performed (by passing a needle, armed with a ligature, through the base of the hæmorrhoidal tumour, it must occasionally happen that one of the larger veins of the rectum is transfixed, and its sides *held apart* by the ligatures tied on the opposite sides of the tumour.

To avoid any of the inconveniences mentioned, the new method of performing the operation is proposed. *It consists in destroying certain portions of the mucous membrane of the rectum "with the strongest nitric acid that can be procured."* The great advantage of this plan of treatment is supposed to consist in the circumstance that the acid, when applied to the mucous membrane, coagulates the blood in the veins of the part, and thereby effectually seals the vessels against the entrance of any foreign matter. Another advantage attending the use of the nitric acid, is, that suppuration is not excited so soon, or to the same extent, as when a ligature is used; the portion of mucous membrane destroyed remains in contact with, and shields, the subjacent parts, till the adhesive inflammation has taken place.

The following conditions are to be observed with regard to the operation:

"1. When a considerable portion of mucous membrane is exposed, certain parts of it are to be selected, to which the application of the acid is to be confined. The effect of the acid may be regulated either by applying very small quantities at a time, or by shielding the surrounding surface with a paste made of chalk and water.

"2. Every portion of mucous membrane to which the acid extends, should be as completely deprived of vitality as possible, since the pain will necessarily be in proportion to the remaining sensibility in the parts.

"3. The degree of pain experienced in this operation, depends, in great measure, upon the part to which the nitric acid is applied. The sensibility of the thin skin around the anus is very great; and, if the acid is allowed to come in contact with it, the degree of tingling pain produced is very considerable; if care be taken, on the other hand, to confine the application of the acid to the comparatively insensible mucous membrane, a slight uneasy sensation in the lower part of the abdomen, is generally all that is complained of.

"4. It is important to remark, that the benefit to be derived from such an operation must not be expected till the small ulcers made by the caustic begin to heal; the loose folds of mucous membrane are then drawn upon, and the whole of the mucous lining is rendered more tense. Each small cicatrix, moreover, serves as a permanent point of attachment for the relaxed membrane; and consequently the inner coat (which alone descends in such cases) is retained permanently in contact with the other coats of the bowel."

STRANGULATED INGUINAL HERNIA REDUCED BY FRIGHT AND SYNCOPE.

The *Gazette des Hôpitaux*, of September 20, 1845, in an article taken from the *Journal de Montpellier*, mentions a case of strangulated inguinal hernia reduced by fright. The patient, a man aged 35, was, it appears, intended to

be made the subject of an operation; but the terror consequent on nouncement made to him by M. CABARET, and on the performance of the operation, produced an attack of syncope. During this, M. observed that the hernial swelling was beginning to subside: this to apply his hand to the part, when reduction was immediately effec

In the same journal, for October 7, some observations are made case, shewing that the reduction is to be attributed, not so much to ror, as to the state of syncope consequent thereon.

There is also given, in the last-named journal, a somewhat similar M. A. POURCHER, junior, Surgeon of the General Hospital of Clerm rand. He was called to visit a countryman who had been the su inguinal hernia for several years, which had now become strangulate unsuccessful attempts to reduce the hernia, M. Pourcher bled hi amount of 150 grammes (about 5½ ounces), thus producing synco the hernia was easily reduced by a sufficient amount of pressure.

TREATMENT OF BED SORES.

In the *Medical Gazette* of Nov. 17 and 24, 1848, we find the follo marks, quoted from the *Dublin Medical Press*:—"When the first unhealthy inflammation makes its appearance, (which is indicated b colour in the integuments), we should take care that all pressure on be immediately removed. This can be done either by the patient's being changed, or by the aid of bolsters or air-cushions; and if th one likely to be protracted, the hydrostatic bed of Arnott should b procured. The simple plan recommended by M. Purefoi (as lately in the *Gazette Medicale*) is well worthy of the attention of the p He uses a cow's bladder, softened in warm water; this, being oiled tially inflated, is placed under the part suffering from continued The effect of this support (in a case of fractured leg) exceeded his tions. He says—'From the moment the patient experienced the c cried out that he was in heaven, and to the end of the fracture h more pain, nor was the bladder changed but once during the month effecting. Another patient, who had gangrene from infiltration of u to rest almost entirely on the sacrum for two months, and was s pain or ulcerations of the part by having placed under it a bladder, as above, and wrapped in a towel.' What renders this contrivance is its simplicity and cheapness; it forms a very manageable substitu hydrostatic bed of Arnott, and will, I am convinced, add more to fort of our patients than a more costly article.

In addition to these preventives, others, to stimulate the surface cite the dormant capillaries to a more healthy action, should be used. The lotion recommended by Sir B. Brodie is admirable for pose. It consists of two grains of bichloride of mercury to an ounc spirit. These two contrivances, if used at the same time, will invaluable in the prevention of bed-sores. The lotion of Sir B. its stimulating properties, will serve to thicken the cuticle, and more efficient to resist injury, whilst the inflated bladder of M. P its softness and elasticity, will preserve an uniform pressure on the ing parts, and allow the free circulation of blood through the cap the surface of the body."

Dr. Bernard makes the following observations:—"The constituti ment is of the first importance in these cases; indeed any local app the sores will prove of little use, unless we support the strength and g the nervous system. In order to understand what constitutional trea best suit our patient, let us inquire into the general symptoms of such find them almost invariably in a state of exhaustion and extreme e

the powers of life having sunk almost to the lowest ebb; the pulse quick and weak; the tongue furred, or morbidly clean; the skin rough and dry; the nights are passed in a sleepless state, from the pain and irritation of the sores; every motion of the patient is accompanied by the most excruciating torture; in fact it is difficult to depict the misery which an individual suffers who is subjected to so great a misfortune. During this period the appetite is often voracious; but, strange to say, the food taken seems to impart little strength to the attenuated body.

"In our treatment, therefore, we must not forget the irritative fever which exists, and the loss of nervous energy which attends this affection, to allay the one and restore the other. I look upon the exhibition of powerful sedatives as a *sine qua non* in the treatment. Dr. Graves, in his observations on this subject (published in the thirteenth lecture of his *System of Clinical Medicine*), recommends anodynes at bed-time. The pain and nervous irritation are, however, so great in many cases, more particularly during the second stages of these sores, that the greatest benefit will be derived from their exhibition at intervals during the day as well as at night. For this purpose I have been in the habit of prescribing, with the greatest benefit, one or two grains of the muriate or acetate of morphia, combined with Murray's fluid camphor at bed-time, and smaller doses during the day, whenever the pain would urgently demand its exhibition. Sulphate of quinine, or some other preparation of bark, ought also to be administered. When constipation exists, enemata, with lukewarm water, will prove to be the best aperient, as our object is to husband as much as possible the strength of the individual. A light and nutritious diet is best suited to such cases. Brandy or wine should be given at intervals during the day, and in quantity according to the necessity of the case.

"When the sores have made some progress towards healing, change of air may be ordered; gentle exercise in the open air (if at all practicable) will be also attended with the happiest results. An hydrostatic chair might easily be constructed, like the Bath chairs in ordinary use. It is only necessary that the seat and back of the chair be rendered waterproof. This can be accomplished by lining it with Mackintosh cloth, and filling the cavity with water after the manner of the hydrostatic bed of Arnott. Whilst daily exercise in this chair will tend greatly to strengthen the constitution, and add to our patient's comfort and enjoyment, it cannot in any way protract the healing of the sores."

OBSTETRICS.

EXHIBITION OF MERCURY IN HYPERTROPHY AND INDURATION OF THE UTERUS; WITH REMARKS ON RETROVERSION AND RETROFLEXION.

An excellent article on the above subject, by Dr. OLDHAM, appears in *Guy's Hospital Reports*, for October 1848.

He first treats of hypertrophy and induration of the uterus, which he considers to arise from three great causes. 1. As a primary affection, which is by far the most common. In this the uterus, remaining congested from non-recovery of its venous circulation after labour or abortion, becomes at length permanently increased in bulk and hardness in various degrees. In the early stage, there is increased sensibility, and this is considered by Dr. Oldham to be a very sure sign of a congested uterus; but, in the progress of the disease, the sensibility diminishes. This affection has been known to follow puerperal metritis, and also hysteritis arising from suppression of the menses, or the use of irritating injections into the uterine cavity. 2. The second great cause is "irritation and congestion of the ovary, in which the Graafian follicles, with their contents, are necessarily implicated." The identity of

the decidual and dysmenorrhœal membranes has been proved by Dr. Oldham, and the pathology of membranous dysmenorrhœa has thus been satisfactorily elucidated. Excitement of the ovaries, whether "from functional disorder at the menstrual periods, in the vital act of oviposition, or from sexual intercourse," induces sympathetic congestion of the uterus, with increased development of its glands. Hence the thin transparent mucous membrane of the womb is raised, either naturally into the form of decidua, or morbidly into a "rich, soft, cribriform membrane, which is cast off at the menstrual period." A continuance of the ovarian irritation, by causing a repetition of the congestion, induces at length hypertrophy with induration and displacement of the uterus; as is proved by the appearances presented by the uteri of prostitutes. Dr. Oldham dissents from the opinion of Dr. Rigby that retroflexion of the womb causes, by mechanical irritation, congestion and chronic inflammation of the ovaries. At the last menstrual crisis, where there are signs of suddenly increased activity in the ovaries, engorgement and induration of the uterus is common; and the symptoms of the affection under consideration frequently date from this period. 3. The internal sexual organs are sometimes secondarily involved in disorder of the organs of digestion and assimilation, usually in connection with excesses in diet, with habits of indolence, or sometimes with hereditary tendency. Such cases have been found accompanied by copious deposits of uric acid; and the symptoms are often relieved by the excretion of a large quantity of this matter. Dr. Oldham has often found relief to result, in cases of congestion of the uterus, from the employment of diuretics. Hæmorrhoids in these cases appear to be rather the result of portal congestion, than of mechanical pressure.

Displacement of the uterus, as a consequence of its hypertrophy and induration, may, in some rare cases, be wanting; but only when the parts supporting this organ, viz. the vagina, and the pelvic muscles and fascia, are in a firm and tonic state. Far more commonly, however—and especially in women who have borne children—the uterus sinks downwards, with generally more or less inclination backwards. The existence of such a state as a doubling of the uterus backwards on itself is greatly doubted by Dr. Oldham. He considers that the most usual degree of inclination is, that the fundus falls about as much backwards, as, in its normal position, it does forwards. The apparent doubling on itself arises from the projection of the posterior wall, as felt on an examination *per vaginam*. This projection is only apparent, the induration being equally distributed over the organ. The reduction of the uterus, when displaced, he considers capable of being generally effected with facility. He says, "It rarely happens but that such a bearing may be got upon the projecting back wall, especially if the right index finger be used, as that the womb may be redressed and returned to its natural position. At first it is, as it were, locked between the finger and the promontory of the sacrum; but after a little well-directed pressure, it soon passes beyond the part, and may be made to occupy its normal direction. If the finger be passed forward to the front of the cervix, and this part be made the fulcrum by which the womb is raised, the change of position may, in many cases, with perfect facility, be accomplished; and it has rarely happened to me to fail in raising and reducing the misdirection by these methods, either separately or in conjunction, provided the womb is moveable, and not held by false membranes or other complicating impediment." This degree of retroversion does not mechanically impede either the bladder or rectum; if the pelvis be small, the cervix uteri may just impinge on the neck of the bladder, particularly under any new source of engorgement. The rectum in most cases escapes, being out of the mesial line. A certain amount of displacement in the healthy uterus, so far from being a disease, as in fact Dr. Simpson and others, is believed by Dr. Oldham to be perfectly natural. The mobility of the uterus in every direction is considerable; and in cases of retroversion of a not previously diseased uterus, which

more than the ordinary displacement of prolapsus, have been caused by accident, as from being thrown forwards with a jerk on a saddle, or from a fall, or, as in a case which occurred to Dr. Oldham, from an epileptic fit.

The symptoms of this affection may be either *sympathetic* or *local*. The *sympathetic* affections assume a great variety of forms; sometimes appearing as hysteria, neuralgia, periodical headaches, affections of the sight and hearing, or mental disorder; of which latter complication the author relates an instructive case. In other cases the digestive organs are affected, and the symptoms of dyspepsia are present. Dr. Oldham has known the vomiting of pregnancy closely simulated for several weeks together. The great danger in these affections is, that the organ secondarily affected receives undue attention.

The *local* symptoms affect not only the uterus, but also the bladder and rectum. The bladder is most commonly the subject of nervous irritation, rather than of actual pressure; and the catheter is very rarely required, even when the uterus is pressed forwards against the pubes by tumours of the ovary or broad ligament. Pains in the course of the ureters, with frequent and sometimes painful micturition, are the most common bladder symptoms, and may generally be relieved by hot fomentations. Sometimes, in cases of disease of the uterus, symptoms resembling those of stone in the bladder have arisen, leading to an erroneous diagnosis. Incontinence of urine is not common, except when the anterior wall of the vagina is much relaxed. Constipation of the bowels appears rather to result from neglect of their functions than from the pressure of the uterus; and sometimes it is a part of the functional disorder of the digestive organs, and sometimes arises from the abuse of medicines. Obstruction from the pressure of the uterus is believed by Dr. Oldham rarely to occur except when the womb is fixed by false membranes; and he gives the particulars of two cases of this nature. The rectum may, however, be sympathetically irritated; and there is often pain on examining it *per vaginam*, and in defæcation. The mucus and fibrinous-like effusions mentioned by Dr. Simpson as sometimes occurring, seem rather to arise from disorder of the intestine than from irritation consequent on the uterine displacement.

The uterine symptoms are partly functional and partly organic. The catamenial secretion is sometimes greatly increased, sometimes irregular and scanty. At times a membrane, or shreds of membrane, with coagula, are expelled; and towards the last menstrual crisis there are not uncommonly copious floodings, sometimes very exhausting, and sometimes followed by local relief. But generally the local sufferings are greatly increased at the menstrual periods, and sometimes resemble the first pains of labour or abortion. In the intervals there is more or less of the discharge peculiar to the cervix uteri, mixed with pus or thin white discharge; and sometimes there is a true uterine discharge, resembling the lochia. Sterility is a common result; but its cause is not displacement, nor the constriction of the cervix in retroflexion; for an uterine sound may be passed through the constriction, and "spermatozoa," Dr. Oldham believes, "will turn the corner of any ordinary flexion, although their vital properties may speedily be disturbed or destroyed by the deleterious influence of uterine secretions."

The organic symptoms are those which mostly attract the attention of the patient. They consist of pains about the pelvis, and radiating from it; sometimes in the inguinal canals; sometimes of a bearing-down character, extending occasionally to the course of the lower limbs, and varying in intensity according to position. Sometimes there is a difficulty in walking; sometimes "biting" pains arise from the uterus towards the umbilicus; and occasionally there is throbbing in the pelvis, with pains resembling those of labour or abortion. Sexual intercourse is always painful, and especially so under any recent congestion.

The *diagnosis* of this affection from tumours and early pregnancy can only be ascertained by a vaginal examination. To effect this, Dr. Oldham recommends "placing the patient on her back, with the legs and thighs flexed and separated, and using the right index finger. In this way a very perfect exploration of the sexual organs may be made, and the left hand is ready to press over the pubes, and, by acting in concert with the examining finger, to obtain more precise information. The left side, however, or the standing position and the left finger, may be very conveniently adopted for this purpose. If the pelvis is deep, and the body of the uterus large, the right index finger, with the patient on the left side, is perhaps the most useful. It generally happens, when the uterus has been for a long time large and congested, that the vagina loses its tones, and may be felt more or less loose and relaxed, and bathed with leucorrhœal discharge. The womb itself is commonly felt low down. The cervix generally participates in the engorgement of the womb, and becomes larger and more solid. The os uteri is, as a common observation, more than usually open, and the soft feel of a granulating surface, which is so very appreciable to the touch, may often be detected over one or both labia. The cervix is placed somewhat vertically in the pelvis, or looks rather more forward; and now and then, when its tissue is soft and yielding, and the anterior wall of the vagina in its upper part strong and firm, it may perhaps be slightly and almost imperceptibly flexed. Passing the finger from the cervix to the upper part of the vagina posteriorly, and carrying it backwards and upwards, an even round swelling, more or less large, continuous with the cervix, may be felt and defined." This swelling is capable of being raised by the finger applied to the cervix; and where there is not much displacement, the increased weight of the womb may be felt on raising the cervix. The continuity of structure between the cervix and the tumour, and their connected mobility, form the principle on which the diagnosis is founded. The employment of the uterine sound, recommended by Dr. Simpson, although often affording aid in diagnosis, is not, in Dr. Oldham's experience, always unattended with mischief. It has, in his hands, even though carefully used, induced in one case metritis, and in another pelvic inflammation; and there is danger of disturbing or destroying the ovum in early pregnancy, especially when there is no suspicion of such a condition. Dr. Oldham now rarely uses this instrument.

The diagnosis of fibrous tumours of the uterus is generally easy, but is much more difficult when one is developed in the centre of the posterior wall; this, however, rarely occurs, and the same treatment would be applicable in both cases.

The diagnosis from ovarian cysts in the early stage, and tumours of the broad ligament, may generally be made out by feeling the whole of th womb before the tumour. Ovarian cysts, in the later stage, are general by the side of or behind the womb, and their fluid contents disclose th character. If pregnancy be coincident with such tumours, its existence c scarcely be ascertained but by hearing the beats of the fœtal heart.

Dr. Simpson describes as "pelvic cellulitis," a form of cellular inflam tion, which may form a hard circumscribed swelling behind the uterus. Oldham has seen four cases of this kind of inflammation, in which, ho the swelling was situated in front of the uterus.

Treatment.—There are here three indications:—"*first*, to reduce th the uterus; *secondly*, to strengthen the structures which have been we and *thirdly*, to improve the general health by attention to the sym affections which may have disturbed it."

To fulfil the first indication, Dr. Oldham recommends the appli six or eight leeches to the upper and back part of the vagina, repe or twice a week, in cases where the uterus is swollen and painful gestion. When there is pain in the sacral or inguinal regions, b

most relief is afforded by the combination of powerful sedatives, with a mild counter-irritant, in the following form :—

Tinct. Aconit. (Fleming) ʒv.
Extract. Belladon. ʒss.
Lin. Saponis Co. ʒiss. Fiat Linimentum.

Of iodine and the iodides he considers, that their virtues have been greatly overrated, and that they are much less valuable than the Bichloride of Mercury, of which he speaks in the following terms :—

"The use of the more powerful preparations of mercury in the acute inflammatory affections of the uterus, or where the signs of a true chronic metritis are present, carried to the extent of salivation, is well understood; but the value of the milder forms of mercury, given in small doses, and continued for a length of time, in gradually absorbing and reducing the thick dense texture of a massive hypertrophied womb, is not, I believe, justly appreciated. The oxide of mercury, and Plummer's pill, are amongst the mild preparations which I allude to, but the solution of the bichloride of mercury possesses some positive peculiar advantages, in the facility with which it may be combined with other remedies, which, in my estimation, give it a decided preference. It commonly happens that the health of females labouring under chronic hypertrophy of the body, or the neck of the womb, suffers materially; and a reasonable fear might be entertained that the protracted employment of mercury would tend to increase this constitutional feebleness. But, by combining the bichloride of mercury with any of the vegetable tonics, or a chalybeate, it will be found to promote and invigorate the general health, whilst its influence in reducing the hypertrophied tissue is sustained. It is this power of combination which renders it so suitable and efficacious in diseases of the uterus; and it (viz. the solution) may be given in doses of one or two drachms, twice in the day, for three, six, or even twelve months, to delicate females without injuriously affecting them. It is a perfectly manageable remedy, and very rarely salivates, unless given in large doses, or the patient be excessively susceptible to the influence of mercury. For the last two or three years I have employed this remedy extensively, both at the hospital and in private practice, and the positive amount of good which it accomplishes, with the very trifling amount of evil, has led me to attach great value to it. The reduction of a large and indurated womb is generally slow, and the time which it takes varies extremely, in different cases. In some cases the effects are comparatively speedy, and six or eight weeks will suffice to absorb and soften a considerable hypertrophy. A recent case occurred at the hospital, in which the patient had a heavy uterus retroverted, and the angle at which the cervix jutted out from the body was so acute as to give the impression, though erroneous, of a distinct flexion, to which the attention of my clinical clerk was particularly directed. In this case the uterus was greatly reduced, and spontaneously restored to its place, after she had taken the medicine eight weeks. In others a much longer time is necessary, during which the uterus becomes more free and movable, and as it diminishes in bulk, its malposition is less and less apparent. If the bowels are torpid, a little tinct. rhei may occasionally be added."

In the treatment of hypertrophy with induration of the cervix uteri, Dr. Oldham is of opinion that much harm may be done by the over-assiduous local application of such remedies as the Vienna paste, the nitrate of mercury, actual cautery, or potassa fusa. He has observed formidable hæmorrhages after the separation of the sloughs, also metritis, with pelvic inflammation and abscess, to occur; and has found the cervix uteri contracted, or even strictured, and the upper part of the vagina the seat of adhesions and puckerings, and radiating cicatrices, resulting from the use of caustics. The use of the liquor hydrargyri bichloridi has enabled him to dispense with a considerable amount of local treatment, which, in his practice, consists mostly in the application to the hard tissue of the unguentum hydrargyri nitratis, in

the form of a vaginal suppository. But in cases where there is incipient fungoid disease, or eversion of the labia, where the inner surface becomes nodulated and projecting, like the commencement of a morbid growth, benefit is derived from potassa fusa, or the acid nitrate of mercury.

To prevent fresh attacks of congestion, attention must be paid to the functions of the bowels. Tepid or cold milk and water injections, used daily, or a very moderate use of saline aperients, as a combination of rhubarb with sulphate of potash and some aromatic, are the best remedies. Long continued exercise or standing should be avoided; and sexual intercourse ought to be indulged in with the utmost moderation.

The indication of strengthening the structures below the uterus is in a great measure fulfilled by the use of cold hip-baths, or baths with bay-salt and alum. Dr. Oldham has long been in the habit of using suppositories, consisting of gr. x. or gr. xij of tannin made up with honey; but he states that they are liable to stick to the vagina, and are difficult to be cleared away. The injection of fluid astringents is serviceable, if the patient know how to employ them effectually. Vaginal pessaries are liable to some objections, from their tendency to excite irritation in the parts with which they are in contact, and even to become imbedded, or to cause ulceration of the vagina, and even perforate the bladder or rectum.

The best form of mechanical support, in Dr. Oldham's experience, is "a firm, well-fitting, elastic abdominal belt, to which is attached an under perineal pad;" and the disagreeable feeling of heat from the pad is easily overcome, and is entirely counterbalanced by the comfort and safety which it affords. Dr. Simpson's uterine supporter has produced so much irritation when used by Dr. Oldham, that he says "he dare not use" it.

The last indication of treatment depends on the varied nature of the sympathetic symptoms, and their demanding attention to general therapeutic principles. Trisnitrate of bismuth, with a grain or two of extract of poppy, is very useful in allaying gastric irritation. Change of air is of very great service; and the diet should be nutritious, but not directly stimulant.

TREATMENT OF VOMITING IN PREGNANCY RECOMMENDED BY DR. STOLTZ OF STRASBURG.

Dr. Schnellbach, in his Thesis (quoted in the *Bulletin Général de Thérapeutique*, tome xxxix, p. 361, 1848), gives the following *résumé* of the treatment which Dr. Stoltz recommends in this troublesome and distressing affection:—

"The first thing to be done when we have to treat a pregnant woman, affected with obstinate vomiting, is to examine carefully whether the affection be the result of simple pregnancy, or whether there be any complications. In the latter case, the first indication is to treat the complication. Thus, if there be signs of plethora, venesection must be practised, without any anxiety as to the term to which pregnancy has advanced. We may have recourse to the application of leeches to the hypogastrium, to the upper part of the thighs, or to the perinæum, in cases of uterine congestion or inflammation, indicated by a feeling of weight in the pelvis, and pains in the hypogastric region. If there be a feeling of uneasiness in the gastric region, we adopt a mild antiphlogistic treatment, apply some leeches to the epigastrium, give cooling drinks, and administer laxative enemata,—a remedy which is, by far, preferable to evacuant medicines. After having thus simplified the problem by removing its complex elements, if the vomiting persist, the cause must be sought for in certain general or particular conditions which are entirely peculiar to pregnancy: such as the general excitability of the nervous system, which is reduced by antispasmodics, or the morbid irritability of the stomach, the remedies for which are cold or iced

small quantities, the application of an opiate plaister over the stomach, and the internal administration of oxide of zinc and trisnitrate of bismuth. In some women, instead of a morbid sensibility of the stomach, the mucous membrane appears to be deficient in tone. It is then that the greatest benefit is obtained from the use of mild stomachics: such as aromatic infusions, distilled waters, infusion of calumba, alcoholic liquors, excitant and antispasmodic draughts; and if this nervous excitability be complicated with a more or less apparent state of chlorosis, tonics and preparations of iron are administered, and recourse may be had to the application of belladonna to the hypogastric region, or a continuance in the horizontal position. There are still, though fortunately rare, some cases of vomiting, which the best-directed efforts fail in curing. In such cases, if the woman is reduced to a state of extreme emaciation; if hectic fever has manifested itself, if every kind of food is rejected, if marasmus makes continual progress, if the patient is threatened with death from inanition, at an earlier or later period,—is it not evident that abortion ought to be provoked? since it has been observed that these symptoms have then disappeared, where the vomiting was purely sympathetic with pregnancy, or with a morbid state which it induced or maintained.

"With the object of giving clearness to this part of the treatment of vomiting during pregnancy, the author has collected a great number of facts, already reported, or which have been communicated to him by Dr. Stoltz. He has arranged them under three categories: the first includes eleven cases of vomiting, terminating fatally; in six, abortion had not been proposed; in three others, abortion had been proposed, but not practised, in consequence of a difference of opinion; finally, in two others, abortion had been unsuccessfully tried,—but in one case the operation failed in consequence of an obstacle.

"The second category comprehends cases of severe vomiting, cured by spontaneous abortion or premature labour. Cases of this kind are very numerous. Finally, the third category includes the cases of severe vomiting cured by artificial abortion. In this category are reckoned three well-observed cases of premature labour, and many others simply mentioned; finally, a case of abortion,—properly so called,—and others, which are mentioned very briefly by authors. One case alone (and that of doubtful authority) is known in which severe vomitings have permitted pregnancy to arrive at its full term."

MATERIA MEDICA AND PHARMACY.

BARK OF THE ADANSONIA DIGITATA, AND ITS ALKALOID ADANSONINE.—SUBSTITUTES FOR CINCHONA BARK AND QUININE.

The Adansonia Digitata[1] is a native of Senegal, but it is found in various parts of the East and West Indies. It is not a tall tree, but the trunk is twenty or thirty feet in diameter. The fruit (called Monkey's bread-fruit) makes an agreeable sub-acid beverage with sugar; or it may be taken as an effervescent draught, with the addition of a few grains of sesquicarbonate of soda. In the West Indies, the natives employ the monkey's bread-fruit as a remedy in catarrhal affections, and as a common article of food.

Dr. DUCHASSAING, of Guadaloupe, in a paper published in the *Comptes-Rendus des Séances de l'Académie des Sciences*, for February 1848, recommends the bark as a valuable remedy in remittent and intermittent fevers. It possesses the advantages of economy, and absence of taste and smell, over

[1] This tree takes its name from Adanson, who long ago employed it in the residents of Senegal.

the cinchona. He says that it produces no disagreeable effects upon the nervous system, assists digestion, and often cures an ague when quinine has failed. It has a tendency to lower the pulse, and cause diaphoresis. Dr. Duchassaing employs it in the form of decoction, made by boiling half an ounce of the bark in a pint of water, until reduced to two-thirds. A reddish-coloured transparent decoction is thus obtained, with an odour somewhat resembling decoction of cinchona bark. From the large quantity of mucilage which it contains, it does not keep long; but by adding a small quantity of sulphuric acid or spirit, the tendency to decomposition is, to a certain extent, obviated, in consequence of the mucilage being precipitated.

Mr. Robert Hepburn, a native of Jamaica, has shewn, in the *Cornwall Courier* (a paper published in the island), that the bark of the Adansonia Digitata contains an alkaloid, differing in its chemical properties from quinine. The chemical properties of quinine, as compared with those of Adansonine, or Baobine, are thus stated by Mr. Hepburn:—

Quinine.	*Adansonine or Baobine.*
1. Sparingly soluble in water; soluble in alcohol and ether.	1. Insoluble in water; sparingly soluble in alcohol and ether.
2. Bitter to the taste.	2. Tasteless.
3. May be obtained in crystals.	3. Uncrystallizable.

We quote the following remarks of Mr. Hepburn:—"Adansonine differs from all the other alkaloids, only resembling stramonine, an alkaloid of the datura stramonium, or thorn-apple, in being tasteless, inodorous, and insoluble in water, while differing from it in being sparingly soluble in alcohol and ether. Adansonine unites with hydrochloric and sulphuric acids, in forming salts, which, unlike their base, are crystallizable and soluble in water, and contain an excess of their respective acids. I first obtained this substance in the form of a hydrochlorate, by boiling the bark in one part of hydrochloric acid with three parts of water. This solution contains an excess of acid, for even after long-continued boiling the liquor is acid to the taste. In order to separate the alkaloid from the acid, it must be decomposed by a solution of carbonate of potash added gradually to the liquor. When a sufficiency of this carbonate has been added, the liquor ceases to effervesce, becomes very alkaline to the taste, and deposits a whitish flocculent precipitate. This precipitate must be purified by repeated washing and drying. The hydrochlorate crystallizes in needles. This alkaloid unites also with sulphuric acid, forming a sulphate, which is soluble in an excess of its acid. When this solution is exposed to the solar rays, and allowed to evaporate spontaneously, the sulphate is deposited in beautiful feathery crystals. Both these salts of Adansonine are decomposed by potash and ammonia. In these respects, it resembles quinine very much; from which, however, it is distinguished, by its salts not giving a precipitate with the infusion of galls."

SOLUTION OF CAMPHOR IN CHLOROFORM—A CONVENIENT FORMU

A sufficiently potent solution of camphor has long been a desider This has been at last supplied by Messrs. T. and H. Smith, of Edinb In the *Edinburgh Monthly Journal* for November 1848, they give t lowing valuable formula:—

"Three drachms of solid camphor are dissolved in one fluid-dr chloroform. This is, perhaps, one of the most remarkable cases of which the whole range of chemistry presents to us. The soluti *rapid* and *complete*, and the bulk of the liquid is now increased f fully four fluid-drachms. This solution, rubbed up with the y fresh egg, may be formed into an extremely elegant emulsion by t of water, without the slightest separation of the camphor or chl fact, no separation of any kind takes place. If to the proportions

as much water be added as to make a four-ounce mixture, each teaspoonful of the mixture, when formed, will contain about five and a half grains of camphor, and about two minims of chloroform. The capability of the formula being varied, so that either the camphor or the chloroform may constitute the predominating ingredient, must be quite obvious. This mixture can be administered in any ordinary vehicle, such as water, without the occurrence of any separation; indeed the mixture is as readily and completely effected as cream with tea or coffee. We have tried the effect of several medicinal substances on the mixture. With none of them has any separation been caused.

"A weak saline solution, composed of common salt, phosphate of soda, and an alkaline carbonate, mixed readily, as well as a solution of muriate of morphia and sulphate of zinc. With the volatile alkali and acid liquids—such as a weak solution of acetic and muriatic acids—the mixture seems to become more intimate and stable. The mixture with ammonia has stood since its preparation—now fully a week—without any separation. With water alone, however, the chloroform solution of camphor separates in a few days, but they readily unite again when slightly agitated. The solution of camphor in chloroform, although insoluble in water alone, appears in this mixture to be in as complete a state of mixture as the butter in milk when newly drawn from the cow."

TOXICOLOGY.

USE OF ARSENIC IN AGRICULTURE.—POISONING BY ARSENIC, AND SYMPTOMS OF CHOLERA.—THE POSSIBLE EFFECT OF THE GAME LAWS; IN A LETTER TO THE EDITOR OF THE LANCET. BY W. H. FULLER, ESQ., M.R.

* * * For some months past, in certain parts of Hampshire, partridges have been found dead in the fields, presenting a very remarkable appearance. Instead of lying prostrate on their side, as is usually the case with dead birds, they have been found sitting with their heads erect and their eyes open, presenting all the semblance of life. This peculiarity, which for some time had attracted considerable attention among sportsmen in the neighbourhood, led to no practical result until about ten days ago, when a covey of ten birds having been found nestled together in this condition, two of the birds, together with the seeds taken from the crops of the remaining eight, were sent up to London for examination. I was requested to undertake the investigation, and the result of my experiments I will now briefly detail. * * *

Having ascertained the presence of arsenic in the food of the partridges, I proceeded to examine the birds themselves. They were plump and in good condition; but the œsophagus was in both cases highly inflamed throughout. The intestines were not inflamed, and presented no trace of ulceration, but they were remarkably empty and clean, almost as if they had been washed with water. May not this have been the result of diarrhœa?

I now, at the suggestion of my friend, Mr. Stone, proceeded to ascertain whether the flesh of birds so poisoned might not itself prove poisonous when eaten, and with this view I carefully cut the flesh off the breast and leg of one of the birds, and gave it, together with the liver, to a fine healthy cat. She ate it with avidity; but in about half an hour she began to vomit, and vomited almost incessantly for nearly twelve hours, during the whole of which time she evidently suffered excessive pain. After this, nothing would induce her to eat any more partridge. I kept her without food for twenty-four hours, but in vain; she resolutely refused to touch an atom more of the bird. This being the case, I gave her some beef and some milk, which she eagerly swallowed, proving, beyond a doubt, that her instinct, and not her want of appetite, induced her to forego the dainty meal which had just been offered her.

I now felt satisfied, from my observation of the symptoms induced in cat, borne out, as they were, by many facts we are acquainted with respe the action of poisons, that the arsenic which the partridges had swall had been absorbed in sufficient quantity into the system to render the of the birds poisonous, and to induce poisonous effects in any one parta of it. However, I was anxious to leave nothing to hypothesis, and as cat had so soon rejected by vomiting the greater part of the bird she eaten, and pertinaciously refused to repeat the experiment by again parta of the poisoned food, I was obliged to have recourse to chemical ana with the view of ascertaining with certainty the existence or non-exist of arsenic in the flesh itself. I therefore cut the flesh off one side o breast of the other partridge, and after about an hour's boiling, I obt by Reinsch's process, a thin incrustation of metallic arsenic, thus de strating beyond question, what the previous experiments had left little for doubting. I was now anxious to ascertain the source of the poison a very little inquiry served to satisfy me on this point. I will not st go into many details which, though in themselves exceedingly interes have no direct bearing upon the question at issue. I will simply mer the leading facts, viz.: that in Hampshire, Lincolnshire, and many parts of the country, the farmers are now in the habit of steeping their w in a strong solution of arsenic previous to sowing it, with the view of venting the ravages of the wire-worm on the seed, and of the smut o plant when grown; that this process is found to be eminently succe and is therefore daily becoming more and more generally adopted; even now, many hundreds weight of arsenic are yearly sold to agricult for this express purpose; that, although the seed is poisonous when its fruit is in no degree affected by the poison; that, wherever this pla been extensively carried out,[1] pheasants and partridges have been poi by eating the seed, and the partridges have been almost universally sitting in the position I have already described; and lastly, that the employed in sowing the poisonous seed, not unfrequently present the s symptoms which occur in the milder cases of poisoning by arsenic. last fact I give on the authority of Dr. Heale, who, up to the last t three years, practised at Staines, and has repeatedly had men under his suffering from symptoms due to this cause.

Now the facts just enumerated, suggest several most important poin consideration. It is notorious that many of the dealers in game are sup through the agency of poachers and others, who have a direct pecu interest in supplying them with the largest possible number of birds. certain, moreover, that if men of this sort were to find a covey of partr in a field, dead, but fresh, and in good condition, they would not hesit send them, with the remainder of their booty, to the poulterer, who as certainly, without suspicion, sell them to his customers. And aft experiments above detailed, there can be no reasonable grounds for dou that these birds, when eaten, would produce disagreeable and injurious to say, poisonous—effects on those who partake of them.

First. It is obvious, therefore, that in all cases of supposed cholera, suspicious bellyache, occurring at this season of the year, we shall do w make particular inquiry as to whether our patient has recently partak pheasants or partridges purchased at a poulterer's. And it is further

[1] In a review on Mr. Taylor's work on Poisons, in the last October volume of the and Foreign Medico-Chirurgical Review, the reviewer states, that "in the spring of great number of pheasants having been found dead in their preserve, their crop removed and sent to us for analysis, and with them some young wheat, about six high, which had been grown from poisoned corn, and on which it was suspected t birds had fed. The earth about the roots of the plants yielded distinct traces of a but the leaves were perfectly free from it."

fest that, in all cases of poisoning, or suspected poisoning, by arsenic, the fact of the persons having lately eaten of partridges and pheasants, must form an important element in the inquiry, and must tend to cast a suspicion on the evidence adduced to prove a criminal intent in the administration of the poison.

Second. If it should prove, on further inquiry, that the practice of steeping seed-wheat in arsenic is, even indirectly, productive of injurious effects on our population, it may become, in these days of sanitary reform, a matter for the anxious consideration of the Legislature, whether they should not adopt some measures to prevent the continuance of such a custom.

Third. As, in the event of a practice so destructive of game becoming universal, pheasants and partridges, in their wild state at least, must, at no distant day, become extinct in this country, it is a question whether landlords may not henceforth be induced to insert a clause in their leases, prohibiting the use of arsenic on their farms; while, on the other hand, it may be a question with those who are already weary of the protracted debates on the game laws, whether they should not allow them to die a natural death, by the gradual but inevitable destruction of the game it is the object of these laws to preserve.

SEEDS OF THE HELIANTHUS, OR SUN-FLOWER, SHEWN TO BE OCCASIONALLY POISONOUS.

Mr. Norris F. Davey has published the following case in the *London Medical Gazette* for 10th November, 1848:—

"4 p.m. Oct. 8th, 1848.—I was called to attend Eliza Hammond, æt. 23, an inmate of the Romford Union-House, unmarried, with an infant a few months old. I found her sitting on her bed, with an anxious countenance; eyes suffused; face deeply flushed; skin generally of a scarlet redness, and very hot; pulse 110, full, soft, and compressible; breathing rather difficult, and hurried; tongue and fauces very red, and inclined to dryness; voice hoarse; pupils natural; mind perfectly clear. She complained of a severe burning sensation in the fauces, œsophagus, and epigastrium; tingling of the skin; nausea; head-ache; thirst; stiffness and dryness of the throat, and difficulty in articulating. She had vomited freely about half an hour before my visit; the ejected matters were not preserved. The bowels had acted once in the morning.

"I found that at 10 a.m. (being then in perfect health) she had eaten a quantity of sun-flower seeds; while eating them, she remarked that they had an unusually hot taste, and immediately afterwards felt a sensation of glowing in the throat and stomach. Shortly after this, she became very sick and ill, and her symptoms increased in severity until the vomiting occurred; she then felt rather better, and continued to amend up to the time of my visit. She could not say how many seeds she had eaten; but she thought more than a hundred.

"As she had vomited freely, I gave her a brisk aperient, and mucilaginous drinks, followed by salines; the next day she felt pretty well, and complained only of a slight head-ache, and some stiffness of the throat. The child continued well throughout, and the secretion of milk was uninfluenced.

"Although the seeds of the sun-flower are so commonly eaten with impunity, the foregoing case shews that serious results may occasionally ensue; and it is probable that many similar cases have occurred, but that, from the generally-assumed harmlessness of the seeds, they have not been recognized as the cause of the symptoms. Hammond had repeatedly eaten them without ill-effect, and on this occasion observed a decided difference in taste and pungency; whence we must conclude that, although usually absent, or in very small quantity, an acrid poison may be, and is occasionally, developed in the seeds of the sun-flower."

REPORTS OF SOCIETIES AND ACADEMIES.

ROYAL MEDICO-CHIRURGICAL SOCIETY.

First Meeting of Session 1848-9. Tuesday 14th November, 1848.
J. M. Arnott, Esq., F.R.S., President.

On the Employment of Nitrate of Potash in Acute Rheumatism; with Suggestions for the use of Saline Solutions as External Applications in Local Rheumatic Inflammations. By W. R. Basham, M.D., Physician to the Westminster Hospital.

Dr. Basham takes, as the basis of his essay, the following facts: 1. That in acute rheumatism, as in other inflammatory diseases, the most important changes in the composition of the blood are, the increased quantity of fibrine, and the deficiency of the saline ingredients; 2. That where this state of the blood exists, there is a special disposition to the deposit of fibrine, and the formation of adventitious tissues; whilst in diseases in which the fibrine is deficient and the salts in excess, in the blood, it does not coagulate, and hæmorrhages of a passive kind occur; and 3. That though, as his own experiments have satisfied him, saline solutions have not the power of dissolving coagulated fibrine, yet certain salts in solution, mixed with the blood at the moment of its escape from the body, possess the property of suspending or retarding the separation of the fibrine. He next inquires whether any therapeutic principle can be deduced from these facts; and proposes the question, whether saline remedies, largely employed, may not suppress the tendency to the fibrinous exudation, or retard it, so as to give time for other remedies to diminish the amount of fibrine present in the blood. With reference to this question, he alludes to the observations of several physicians on the use of nitrate of potash in acute rheumatism, and details his own experience of its effects. He gives one, two, or three ounces of nitrate of potash, diluted with two quarts of water, in twenty-four hours. In the majority of cases, no obvious effect is produced in the force or frequency of the pulse, or the digestive functions, or on the quantity of urine exuded. But the urine always acquires a high specific gravity, and nitrate of potash may be detected in it. The swelling, heat, and pain of the joints affected with rheumatism are relieved in a most marked degree, even when no other remedies are employed at the same time. There is a certain amount of exemption from cardiac complication; and cardiac inflammation, when present, is more amenable to remedies. In a case which the author relates, he examined the blood of the patient before the commencement of the saline treatment, and again after this treatment had been continued for some days. In the first instance it was buffed and cupped, the fibrine was in excess, and the salts were deficient. After the administration of the nitre there was no buffy coat, the proportion of fibrine had diminished, and that of the salts had increased. The author presumes, therefore, that while the internal use of the nitrate of potash assisted to restore the proportion of the saline ingredients, the other treatment employed tended to lessen the excess of fibrine. Some remarks of Mr. Gulliver have led the author to investigate the effects of the external application of saline matters to parts affected with rheumatism. His experiments have been principally made with the nitrate of potash. In chronic rheumatism he has used the iodide of potassium, and in gout the bibasic phosphate of soda. He applies the saline solution by means of spongio-piline, a portion of which, large enough to cover the part affected, having been moistened in water, the salt employed is then sprinkled in powder on the spongy surface; it is then applied

and secured with a roller. In numberless instances, by this simple treatment, he has witnessed the most palpable and instant relief to the local inflammation. Constitutional remedies were employed at the same time; but the relief was proved to be due to the saline applications, by the fact that, where several joints were affected, only those were relieved to which the salt was applied. At the end of the paper, the author gives an abstract of seventy-nine cases of acute rheumatism, shewing the results of treatment, and other particulars.

Dr. Henry Bennet had witnessed a similar mode of treatment to that practised by Dr. Basham, at Paris, in 1837, and subsequently. In that year, M. Gendrin had instituted a series of experiments with the nitrate of potash, in acute rheumatism. He gave it in doses varying from six to twelve drachms. He had seen this treatment adopted in about as many cases as were recorded in the paper before them, and with the same result. It was found to be a safe, as well as energetic, remedy. In the experiments of M. Gendrin, no other medicine was given,—not even aperients. The result of the treatment was generally successful; but in every tenth or twelfth case it was found necessary to resort to the old remedies, bleeding, calomel and opium, etc. It was noticed also, that patients treated with nitrate of potash were unusually free from cardiac disease; more so, indeed, than under any other kind of treatment. Another notable circumstance connected with this mode of treatment was, that patients recovered more rapidly under its use. This was most important, particularly in Paris, where bleeding was often resorted to, to a considerable extent, and patients were consequently kept months, and even years, in a weakly condition. He had never seen any injurious effects arise from the large doses given; this, no doubt, was owing to the large quantity of fluid in which the medicine was dissolved. In all cases of poisoning by this agent, recorded in works on medical jurisprudence, the quantity of fluid used was small. He (Dr. Bennet) had recorded some cases treated with this medicine, in the *Lancet* of 1845. The plan pursued was perfectly original, and the originality was due to Dr. Basham. In slight rheumatic cases, with little febrile action, this treatment was most beneficial, the patients recovering in four or five days.

Dr. C. J. B. Williams asked the number of days that were required to give relief to the acute symptoms in rheumatic fever.

Dr. Basham said, that in only two cases had he treated the disease by nitrate of potash alone. The acute inflammatory symptoms usually gave way on the third or fourth day: and it was important to state, that in no one case treated by the nitrate of potash had there been any relapse. This was a strong recommendation in favour of this treatment, when we recollected how frequently relapses occurred when the other modes of treatment were employed. In the first instance, he had given as much as four ounces of the salt in twenty-four hours; but he had now reduced the quantity to one or two ounces in that period. A great quantity of the salt was eliminated by the urine; the quantity of which was not much increased; but its specific gravity was a great deal higher, averaging between 1030 and 1040. This increase in the specific gravity he considered to be due to the potash.

Dr. C. J. B. Williams did not think this increase in the specific gravity of the urine was due to the nitrate of potash; but regarded it as the result of the elimination of urea and the salts of lithic acid from the system. This, or an increase in the quantity of the urine, was a circumstance which obtained when rheumatism was treated by other remedies. The result, in his own experience, of another treatment,—that by salines and colchicum, with bloodletting when necessary,—was that convalescence usually took place from the third to the sixth day, and a cure was effected in from two to three weeks, according to the severity of the case. Feeling doubtful at one time as to the relative effect of salines and colchicum on the disease, he determined to treat some cases entirely by the former; and with this view

gave, in sub-acute rheumatism, the carbonate and tartrate of s
every two or three hours, until four or five drachms were given i
These remedies mitigated the pain and fever, but the rheumatism
although the salines were unremittingly persevered in for ten
days. Colchicum was then added, and in three days the pain was
specific gravity of the urine becoming at the same time much hi
the presence of urea and the lithates. It was remarkable, too
urine often retained its acid property, even in cases where the pe
was acid.

Dr. Basham had expressly stated in his paper that he regarde
employed, the nitrate of potash only as an adjunctive remedy. H
to other remedies, among which might be mentioned colchicum.
with Dr. Williams as to the cause of the increase of the specific
urine as high as 1028 or 1030; but the excess beyond these
believed to depend on the nitrate of potash.

On the Advantages of Solutions of Caoutchouc and Gutt
in Protecting the Skin against the Contagion of Animal
By William Acton, Esq.

The author has arrived at the following conclusions as to the
power of solutions of gun-cotton, gutta percha, and caoutchouc:
the solution of gun-cotton, when dry, corrugates the skin too m
available for the purposes required. If the skin be stretched, th
of the dried solution ruptures in various places, and the surfa
healthy cuticle beneath is chapped, and becomes excessively pa
ticularly if ether be employed to remove the hardened pellicle.
gutta percha alone is devoid of elasticity and sufficient adhesiv
while the solution of caoutchouc wants body and is too sticky; b
3. The compound solution of caoutchouc and gutta percha pos
requisite qualities to fulfil the purposes required.

It is prepared by adding a drachm of gutta percha, and ten
caoutchouc, each to a separate ounce of benzole (the volatile p
coal naphtha), and mixing them, when dissolved by a gentle heat
proportions. When the surface surrounding a chancre is painted
solution, the acrid secretion has no effect on it, and warm or cold
be used with impunity. It may be also advantageously used for th
of protecting the skin from the contact of acrid secretions or anim
Mr. Quekett has found that a dried film of the compound is perfec
and free from perforations, though in many places less than the
an inch in thickness.

Second Meeting.—Tuesday, Nov. 28, 1848.

J. M. Arnott, Esq., F.R.S., President.

Causes of the Endemic Puerperal Fever of Vienna. B
Routh, M.D. London. (Communicated by Dr. Murphy.)

There are three Lying-in-departments in the General Hospital
To one strangers are not admitted. Of the two others, to whic
author's remarks refer, one is destined for the instruction of medica
midwives, the other for the instruction of midwives only. Th
number of deliveries in each department is from 250 to 300 per mo
mortality in the division for midwives and medical men has gone
thirty per month, and has occasionally been seventy. In the d
midwives only, the number of deaths has generally been from sev
per month. The clinical instruction is conducted on precisely
general plan in the two departments; but the medical men re
practical instruction in a private course, in which the operation
formed on the dead body of some female, while the midwives re

instruction by means of the leather phantom. The frightful mortality in the division to which medical men are admitted, became the subject of a government inquiry, and the number of students in attendance was reduced from forty to about thirty. The mortality, however, remained the same as before. On inquiry, it was found that in other countries, where there were two divisions in the lying-in-hospitals, one for midwives, and another for medical men, the mortality was far greater in the latter. The author adopts the explanation proposed by Dr. Semelweiss, the assistant-physician of that division of the Vienna Lying-in-Hospital in which the great mortality has occurred —namely, that the mortality from puerperal fever there arose from the "uncleanliness of medical men and students in attendance," their hands being impregnated with cadaveric matter through dissecting, making autopsies, and performing obstetric operations on dead bodies. Dr. Semelweiss recommended all students attending his division of the lying-in-hospital not to handle dead matter, or, if they did so, forbad them to make any examinations of the patients till the following day. He directed every student to wash his hands in a solution of chlorine prior to, and after, every examination of the living subject. The result was, that the deaths were reduced from thirty per month, to seven per month, the usual average mortality of the division for midwives only.

Dr. MURPHY said that the novel point in the paper was the fact established by the author, that puerperal fever was propagated by the students, who had been recently examining dead bodies. In his own experience in the Dublin Lying-in-Hospital, he had found attention to ventilation, and cleanliness the best preventive of the disease. When Dr. Collins was appointed master of that institution, the puerperal fever was at its height. He had tried every means to eradicate it. The perseverance in improved ventilation, etc., succeeded; for the last four years there had been no case of puerperal fever. Dr M. referred to the case of a German student, who was constantly at post-mortem examinations. Puerperal fever seemed to attend him wherever he went; but on his giving up his pursuit after dead bodies this ceased.

The PRESIDENT inquired if it accorded with the experience of the accoucheurs present, that pupils from the dissecting-room gave puerperal fever to their lying-in patients more frequently than midwives? This appeal of the President was not responded to, and

Dr. GREGORY asked another question—Why puerperal fever had, within the last four or six weeks, been so prevalent in lying-in hospitals?

Dr. CORLAND said, that the facts stated in the paper were so convincing, that we could scarcely doubt their accuracy. The mode of infection mentioned by the author was, however, only one of the modes in which puerperal fever was propagated. It was known that the disease might be communicated also by the hands of the accoucheur who had attended a case of the disease. The paper had proved that it might be communicated by the hands used in post-mortem examinations. But the disease frequently broke out without any chance of its origin being traced to this cause. In most cases, in the lying-in hospitals, the matrons, or midwives, who did not examine bodies, delivered the patients. He thought that something was due to the frequency with which examinations during labour were made, and also to the atmosphere of lying-in establishments. This was impure, from the effluvia resulting from the lochial and other discharges of the women. In this way the disease was propagated by napkins, &c.

Mr. MOORE could testify to the accuracy of the author's description of the cleanliness of the hospitals in Vienna. The amount of post-mortem examination going on in that establishment was remarkable. He had seen as many as fifteen bodies lying for examination in a morning. The students and professors had their hands immersed in these for hours together. The position of Vienna was such as not to surprise any one that puerperal and typhus fevers were prevalent there.

Mr. Marshall said, that he had been examining a body. He from thence to a labour, but took the precaution of changing all and washing his hands in solution of chloride of lime; his pa ever, was seized with puerperal fever, and the next following th from the same malady.

MINUTE ANATOMY OF THE LUNG OF THE BIRD, CONSIDERED RELATION TO THE STRUCTURES WITH WHICH THE AIR IS IN CONT TRAVERSING THE ULTIMATE SUBDIVISIONS OF THE AIR-PASSAG RAINEY, Esq., M.R.C.S., Demonstrator of Anatomy at St. Thomas (Communicated by Dr. TODD.)

The trachea in birds, in addition to the structures composing t the mammal, is almost entirely surrounded by a layer of muscul the striped variety. The calibre of the bronchial tubes is mo than in mammals, and the inter-cellular passages, which are v are given off at right angles with their axis, instead of being from their extremities. These peculiarities, the author observe dered necessary in birds by the additional function which these to perform in this class of animals. The bronchial tubes in bird by a distinct fibrous membrane, which, at those parts of the tube the inter-cellular passages proceed, is distinctly perforated, s bronchial membrane, as in the human lung, does not extend f the bronchial tubes. The inter-cellular passages, which at their ment are but small, soon lose themselves among the air-cells. T surround the bronchial tubes, and fill up the interval between th spaces which separate the lobules, the inter-lobular fissures appea uninjected lung to be merely the cellular walls of these tubes. uses the term *air-cells*, because physiologically they may be co such. The capillaries (he goes on to notice) form, by their frequ moses upon different planes, a kind of dense solid plexus, wit separations between the vessels for the reception of the inspire the open areolæ or meshes of the plexus, which communicate free the whole of a lobule.

The author next observes that the bronchial tubes have a ve lining of ciliated epithelium, which ceases where the bronchial gives off the inter-cellular passages. To render this fact more s gives the measurement of epithelial cells, which were taken fro chial tubes of a pigeon, which are stated to be 1-800th of an inch and about 1-3300th of an inch in breadth, showing that the ul divisions of the air-passages in the bird are several times small individual particles of epithelium which are by some physiologists to line them. Although, he observes, the ultimate subdivisions passages in birds are so extremely minute, yet it is in them we se tory organ of the greatest efficiency, and in its greatest state of the inspired air being admitted directly in contact with the capillaries, and all around their entire circumference. The a remarks that, however the organs of respiration in the differen animals may differ in their anatomical characters, the principle u they act must be the same; and therefore, that if the simple exp blood in the capillaries to the action of the air be all that is requi aeration of blood in the bird, in which this function is performe greatest activity, it ought to be sufficient in those animals in whic formed with less energy. The correctness of this inference is the a comparison of the structure of the lungs of several mammals wi the bird, by which it is apparent that a gradually-increasing rese structure to the lung of the bird exists in different animals, in pr the activity of their respiration approaches to that of birds. This r is marked by the minuteness of the air-cells, the absence of all re their arrangement, and the partial deficiency of the membrane

nects the pulmonary capillaries. The air-cells in many mammals are much smaller than the individual particles of ciliated epithelium lining their bronchial tubes. In confirmation of this fact, the author refers to the lung of the kangaroo, hare, rabbit, dog, rat, and mouse. From these facts and considerations, the author concludes that the ciliated epithelium can have nothing to do with the immediate function of the lung in the process of aeration of the blood, and that its office is probably only mechanical, the function of aeration requiring for its performance only the pulmonary capillaries, with the blood within them as they exist in the simple, though most perfect and efficient respiratory apparatus of the bird.

Case of Cysticercus Cellulosæ in the Anterior Chamber of the Human Eye. By Wm. Mackenzie, M.D., Glasgow, Surgeon-Oculist in Ordinary, in Scotland, to the Queen.

E. G——, aged sixteen, applied at the Glasgow Eye Infirmary in September 1848, on account of obscurity of vision in the left eye. On examination, a spherical body, about one-eighth of an inch in diameter, was discovered lying close in front of the pupil, in the anterior chamber, and this proved, on closer inspection, to be a Cysticercus Cellulosæ. The patient stated, that in June the left eye had been the subject of acute inflammation, which occurred immediately before the appearance of the hydatid. Objects placed in a direct line before the eye or below it, he saw very indistinctly, but in a moderate light the expansion of the pupil left one-third, at its upper part, unobscured. The position of the hydatid varied to a certain extent, and was an object of curiosity to many. Its opaque body, its tail, vesicle, and rostellum, together with its four lateral suckers, could be distinctly made out, and it was observed to be most lively in the morning and when the patient was warm. She was quite unconscious of the motions of the hydatid, and did not appear to suffer pain from its presence. On October 14th, the foreign body was removed by the following operation:—The patient was placed on her back, and the eyelids being retracted, a puncture was made with Beer's pyramidal knife, at the temporal head of the cornea, to the extent of three-twentieths of an inch. Schlagintweit's hook was then introduced, and the hydatid was seized and easily withdrawn. The iris protruded a little through the wound, but was readily reduced by friction, through the medium of the upper eyelid. Not a single bad symptom followed, and the patient was dismissed quite well in a week. The hydatid was placed in tepid water, and continued to move for fully forty minutes after its removal from the eye. Viewed through a compound microscope, the transparent corona of claws surrounding the rostellum were distinctly seen, as were the corpuscles scattered over its neck, and the four lateral suckers. The author states it as his opinion that the attack of ophthalmia, in June, immediately preceding the appearance of the hydatid, was owing to the development of its ovum in one of the blood vessels of the iris or choroid, and that the inflammation ceased suddenly, as soon as the hydatid dropped into the anterior chamber, where it lived at its ease and throve on the aqueous humour. He avoided trying any application with a view of killing the hydatid, as likely to irritate the organ; and even if effective the exciting cause of inflammation would still be left. He did not apply belladonna, fearing that the cysticercus, as occurred in Nieumann's case, might fall into the pupil and irritate the iris. A further delay in operating he considered unjustifiable, on account of the risk which it involved of inflammation being excited, and the eye being sacrificed.

Third Meeting. Dec. 12.—J. M. Arnott, Esq., F.R.S., President.

On Creeping Bubo, illustrated with Sixteen Drawings and Cases. By Samuel Solly, F.R.S., Senior Assistant-Surgeon to St. Thomas's Hospital.

The object of this paper is to distinguish a form of bubonic ulceration, which requires mercury for its cure. The author begins by reprobating the practice of treating syphilis without mercury, and attributes the numerous

cases of secondary syphilis, which are met with in the present d
practice. He points out the characteristic appearances of acute
sloughing, and phagedenic bubo, to distinguish them from creep
He describes this bubonic ulceration as presenting a yellowish co
inverted, overlapping, hard, corrugated, whitish edges. As a ge
he says it does not occur if the primary symptoms are judicious
with mercury. That it occurs in some cases after the original ch
healed,—that it is in such cases that a correct diagnosis is most i
—that it is comparatively easily arrested, if it be combated with m
the onset, but excessively obstinate if it attains any size,—that
should be administered by injection, unadulterated with stimul
tonics,—that the cases which are not benefited by mercury are t
tion to the rule, and are very few in number,—and that mercury is
powerful instrument we possess to arrest the disease. He related,
duced drawings of, nine cases, five to illustrate the extreme ob
the disease, and four to show the curative power of mercury, adm
decidedly in its early stage.

EXTRAORDINARY CASE OF INJURY WITHIN THE UTERUS, WITH REPARATION BEFORE BIRTH. By JOHN DALSTON JONES, M.R.C.S.E. (Communicated by Dr. PEREIRA.)

Mrs. B., of Dalston, was attended by the author, in April last, in confinement; she had a quick labour, and bore an average-sized m
A few minutes after the birth, his attention was directed to the
appearance by the nurse:—An open wound extended from the thi
vertebra across the scapula, along the back part of the humerus,
an inch of the elbow. The existing condition of the wound, at th
birth, was illustrated by a drawing, which showed that a consider
tion of the wound was already healed, a part of the cicatrix se
indicate that there had been ulceration of the edges of the wound
the healing by granulation. The edges of the wound were jagged
the spinal termination appeared bifurcated.

In speculating upon the probable causes of this singular injury, th
classes his queries under four heads, viz.: Would a blow produce it
it the funis? Was it by a sudden and violent contraction of the ute
lastly, may it not be ascribed to an accident which the mother had
weeks before delivery? The author considers that he is justified
cluding that the last-mentioned was the efficient cause. The natur
accident was this:—The patient was running down stairs in a hur
she trode upon a cat; and, to save herself, made a spring of fiv
steps at once, alighting on her feet. This was succeeded by pain
the time, and a sanguineous discharge from the vagina on the f
day, which, however, soon disappeared.

The author states, that this large wound was quite healed at the
tion of five weeks; and concludes his paper by directing attentio
importance of the case in a medico-legal point of view.

MEDICO-CHIRURGICAL SOCIETY OF EDINBURGH.

SECOND MEETING OF THE SESSION, December 13, 1848.

POSITION AND MOTIONS OF THE FŒTUS IN UTERO.—Dr. J. Y. S
made a communication on the attitudes, natural and preternatural
fœtus in utero, and showed them to be acts of the reflex or excito
system of nerves. In the case of dead children, where the presentat
frequently preternatural, the child was submitted to all the physical
gravitation, and still the head did not present. Dr. Simpson explai
theory of Professor Dubois, who conceives, that the position of the
the os uteri is owing to instinctive and voluntary action on the part
infant. But Dr. Simpson argued, that the motions of the fœtus in ute

not voluntary, or connected in any degree with the brain or mind, as they took place in anencephalous fœtuses, where the brain was entirely wanting. At the full time, said Dr. S., the pregnant uterus is of an ovoid form; and the fœtus is laid up within it in an ovoid form;—further, the broad or pelvic end of the ovoid of the fœtus corresponds to the broad or upper end of the ovoid of the uterus; and the narrow or cephalic end of the ovoid of the fœtus corresponds to the lower or narrow end of the ovoid of the uterus. Thus, when the child is made to move, by the mother altering *her* position, or other such causes, it immediately moves so as to swim back into the position in which it may be again most free from external impressions, viz., that with its head at the narrow end of the uterine ovoid, and its pelvis at the broad. The immediate cause of its motion, in these and other circumstances, according to Dr. Simpson's views, is the pressure of the walls of the uterus upon projecting parts of the fœtus; and perhaps the parts pressed upon, which most easily excite the motions, are the soles of the feet, the knees, and sides,—parts that remain even super-sensitive in the adult. Dr. Simpson stated, that if any projecting part of a child, such as the knee or hand, be touched through the uterine walls, it immediately moves away from the contact, as an adult does in sleep. Dr. Simpson considers the preternatural positions of the fœtus owing to causes altering the relative forms to each other, of the uterine cavity, or of the fœtus contained in it, and hence necessitating the fœtus to place itself in abnormal positions, so that it might be as free as possible from external impressions acting upon its excitor nerves.

The recurrence of preternatural presentations in the same mother, Dr. Simpson attributes to peculiarities in the forms of the uteri in these mothers. He brought forward statistical evidence to show that the position of the child with its head lowest, only begins to be assumed about the seventh month, and becomes more and more steadily assumed up to the full time. If the child die in utero, during the three latter months, the position is lost. Statistical tables were shewn to prove this. Lastly, the circumstance of the position only beginning to be assumed about the seventh month, was stated to be the reason why children born under the induction of premature labour often presented preternaturally.

Contagion of Cholera.—A conversation took place regarding cholera, in which some facts were brought forward, tending to favour the idea of its being, at least under certain circumstances, contagious.

Dr. Simpson called attention to the circumstance, that cholera had reached Edinburgh from the Continent, passing the numerous and crowded villages on the shores of the Firth of Forth. The first cases which occurred took place at the fishing village of Newhaven, two miles from Edinburgh. On the Saturday previous to Wednesday the 4th of October (on which day it first appeared in Edinburgh), three pilots went to the Isle of May, in the mouth of the Firth, on the look-out for vessels. They spoke a ship from Cronstadt, bound to Leith. One pilot was taken on board, while the other two remained in their boat, on the lee side of the vessel, and were towed to Leith,—a distance of four or five-and-twenty miles,—exposed to the exhalations from the ship. Both were seized with diarrhœa on their passage. They were not on board the ship until they arrived at Leith, when they went on board to obtain refreshment. Both were seriously ill afterwards; and one died on the Sunday. Dr. Simpson's coachman, who accompanied him when he was making these inquiries in Newhaven, was shortly afterwards attacked with cholera, and had a narrow escape with his life. Before any inquiries had been made about the vessel, it had left Leith; but Dr. Simpson still hopes to be able to ascertain whether cholera had occurred on board during the voyage.

Election of Office-Bearers.—The following gentlemen were chosen by ballot: *President*—James Syme, Esq., F.R.S. *Vice-Presidents*—Sir William

Newbigging, Professor Goodsir, and Dr. Begbie. *Councillors*—John Coldstream, M.D., James Dunsmure, M.D., Richard M'Kenzie, M.D., Benjamin Bell, Esq., Halliday Douglas, M.D., Alexander Wood, M.D., James Robertson, M.D., William Cumming, M.D. *Treasurer*—Robert Ormond, M.D. *Secretaries*—John Taylor, M.D., W. Robertson, M.D.

MISCELLANEOUS INTELLIGENCE.

QUEEN'S COLLEGES, IRELAND.—*Faculty of Medicine.*—Candidates for the degree of M.D., in the Queen's University in Ireland, will be required to pass the matriculation examination prescribed to Students in Arts, and to pursue the following course of study :—

First Year —	The Greek and Latin Languages	One Session.
	The French Language	One Session.
	Chemistry	One Session.
	Physics	Four Months.
Second Year —	Descriptive Anatomy	Six Months.
	Practical Anatomy	Six Months.
	Practical Chemistry	Three Months.
	Botany	Three Months.
Third Year —	Physiology	Six Months.
	Materia Medica	Six Months.
	Practice of Surgery	Six Months.
Fourth Year —	Practice of Medicine	Six Months.
	Midwifery	Six Months.
	Medical Jurisprudence	Six Months.

In addition to the foregoing classes, candidates for the degree of M.D. will be required to attend a general hospital during twenty-four months, or a general hospital during eighteen months and a dispensary six months, and also a course of practical pharmacy for three months.

Candidates will be required to attend one-fourth, at the least, of the above classes, in some of the Queen's Colleges in Ireland, and for the remainder, authenticated certificates will be received from other Colleges or Medical Schools, recognised by the Senate of the Queen's University.

Students in Arts will be admitted to examination for the degree of M.D., two years after having obtained the degree of A.B., provided they shall have completed the curriculum prescribed for the second, third, and fourth medical years.

Every candidate, before being admitted to the degree of M.D., will be required to undergo an examination in all the subjects comprehended in the above course of education, and to make a declaration that he is twenty-one years of age.

The fees payable by matriculated Students in Medicine to the bursar, behalf of the College, will be—

First year (including the Matriculation Fee)	£3	0	0	Fourth year		2	0
Second year	2	0	0	Degree of M.D. (exclusive of Stamp duty)		5	
Third year	2	0	0				

The fees payable by Matriculated Students in Medicine to the professors, for each course of lectures prescribed for the degree will be—

The Greek Language	£2	0	0	Materia Medica		2	
The Latin Language	2	0	0	Practice of Medicine		2	
The French Language	2	0	0	Practice of Surgery		2	
Physics	1	10	0	Midwifery			
Descriptive Anatomy	2	0	0	Medical Jurisprudence			
Physiology	1	0	0	Practical Anatomy			
Chemistry	2	0	0	Practical Chemistry			
Botany	2	0	0				

Non-matriculated Students will be permitted to attend any separate course or courses of lectures delivered by the medical professors, on payment of 5s. each Session to the bursar, on behalf of the College, and of the regulated class-fees to the professors, viz.:—

	One Course.	Perpetual.
Anatomy and Physiology	£3 0 0	£5 0 0
Practice of Medicine	2 0 0	3 0 0
Practice of Surgery	2 0 0	3 0 0
Chemistry	2 0 0	3 0 0
Botany	2 0 0	3 0 0
Materia Medica	2 0 0	3 0 0
Medical Jurisprudence	2 0 0	3 0 0
Practical Anatomy	3 0 0	
Practical Chemistry	3 0 0	

EDWARD BERWICK, Secretary.

Board of Queen's Colleges, Dublin, December 4, 1848.

The above Prospectus, with its low fees and inadequate curriculum, is likely to excite discussion. The creation of a new Medical Diploma manufactory, before the settlement of the Medical Reform question, is not encouraging.

EDINBURGH HOSPITALS.—Dr. William Robertson, one of the Physicians to the Royal Infirmary, has been appointed to the Cholera Hospital; and has already published an interesting account of his practice. Dr. Gairdner has succeeded Dr. Hughes Bennett in the office of Pathologist to the Royal Infirmary, which the latter resigned, on his assuming the arduous duties of his double chair of the Institutes of Medicine and of Clinical Medicine. The office of pathologist has been held, within the last ten years, successively by Dr. John Home, Dr. John Reid, Dr. Peacock, Dr. Hughes Bennett, and Dr. Gairdner. Dr. Richard Mackenzie has lately been appointed one of the Assistant Surgeons to the Infirmary.

GOVERNMENT GRANTS FOR SCOTTISH UNIVERSITIES.—Dr. SPITTAL drew the attention of the Edinburgh Town-Council (on the 19th December), to the circumstance, that scarcely a day elapsed without letters from the professors of the University in reference to their class-rooms, and the damp state of the atmosphere in the Museum. That building contained many valuable collections in natural history; but several of the specimens were, he believed, in a state of decay from damp. Government were giving grants to the Irish Colleges, and much money was expended upon them, while Scotland was neglected. He thought they should make a strong representation to Government, in order that they might obtain some additional grant for improving and ventilating the rooms of the University and for similar purposes.

The LORD PROVOST said, that the reason why the interests of Scotland were overlooked was, that the people were too quiet and orderly. If they were more rebellious, they would get more attention paid to them. (A laugh.)

Mr. FRASER hoped that this matter would not be allowed to rest. There was a strong feeling abroad, in reference to the way in which Scotland was treated, particularly as related to education. Large grants were now given to Ireland. New Colleges were building in Ireland, the smallest salaries in which were larger than any in the Scottish Universities. He intended, on some occasion, to bring forward the way in which the educational institutions of Scotland were treated by the Government.

ERYSIPELAS.—This disease appears to be very prevalent in some districts, both in London and in the country. In some of the London hospitals it has lately attacked the cases which have been operated on, often with fatal results. Other probably allied affections, as hospital gangrene, and peritonitis (of a low form), after operations for strangulated hernia, have

occurred. In some parts of Scotland it has been lately raging with unexampled severity, attacking almost every wound, however slight. We are also informed that idiopathic erysipelas is prevalent in some parts of England; and it appears to have occurred frequently in London, without as well as within the hospitals.

For the last nine months erysipelas has been, and still continues to be, prevalent in Inverness. The application of a blister, an irritating liniment, or a wound however trifling, are in five cases out of ten sure to be followed by erysipelas. Many persons have died of erysipelatous sore throat and inflammation of the lungs—all unyielding to depletive remedies. In the Infirmary of that town, the dread of erysipelas has for a considerable time been such as to deter many persons from entering it.

Cholera.—This disease does not appear to have lately made any progress in England; but, on the contrary, seems rather to have diminished. In Scotland, however, it has been very prevalent and fatal, especially in Edinburgh, Glasgow, and Dumfries. As statistical accounts of the number of cases and deaths are given in the daily newspapers, we postpone our report.

Plymouth Public Dispensary.—Dr. Cookworthy.—On the 12th December, a special general meeting of the Governors of this Institution was held to celebrate its Fiftieth Anniversary: and to mark the great and generous services during more than thirty years of its senior Physician, Dr. Cookworthy, by the deposit within the buildings of the Dispensary of his portrait; and the presentation to him of a silver tea service.

Medical Profession in Paris.—The *Almanach Domange* for 1849 gives the following statistics:—There are 1389 medical practitioners in Paris, being 53 less than in 1847. Of the 1442 practitioners mentioned in the general list for 1847, 56 have died, and 112 have left Paris. Among the 1389 who appear in the list for 1849, there are 114 new names.

Nine medical men in Paris have been elected representatives of the people; viz., Messrs. Bixio, Buchez, Dezeimeris, Gerdy, Lelut, Maissiat, Recurt, Trélat and Trousseau. The medical profession in Paris contains 398 members of the Legion of Honour; viz., 7 commanders, 50 officers, 341 chevaliers.

BOOKS RECEIVED.

Ashwell on Diseases of Women. London: 1848.—Bennett on Cancerous Cancroid Growths. Edinburgh: 1849.—Bird (Golding) Therapeutics in relation Depuration of the Blood. London: 1848.—Billing on Cholera. London: 1 Bainbridge on Chloroform. London: 1848.—Blakiston on Diseases of the London: 1848.—Boddy on Cholera. London: 1848.—Carpenter's Introductory L London: 1848.—Delta, Wonders displayed by the Human Body. London: 1848 on Advanced Life. London: 1849.—Fownes, Chemistry as exemplifying the Wis Beneficence of God. 2nd Edition. London: 1849.—Fergusson's Introductory London: 1848.—Gay on Femoral Rupture. London: 1848.—Gairdner on P the Kidney. Edinburgh: 1848.—Hope on Diseases of the Heart. 4th Edition 1849.—Holmes on Cholera. London: 1848.—Hawthorne on Cholera. Lond Kirkes's Hand-Book of Physiology. London: 1848.—Miller on Chloroform. 1848.—Möhr and Redwood's Practical Pharmacy. London: 1849.—Macli Anatomy. Fasciculus I. London: 1848.—Neligan on Diseases of the Sca 1848.—Peacock on Influenza of 1847-48. London: 1848.—Quain an Anatomy. London: 1848.—Reid (John) Memoirs. Edinburgh: 1848.—R on Cholera. London: 1848.—Stilon on Cholera. London: 1849.—T pentine. London: 1848.—Snow on Inhalation of Ether. London: 18 Forceps (from Obstetric Record). 1848.—Tanner, Memoranda on Poisons. —Winn on General Paralysis of the Insane. London: 1848. Wal London: 1847.—West on Diseases of Children. London: 1848.

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FEBRUARY 1849.—No. II.

ORIGINAL COMMUNICATIONS.

OBSERVATIONS ON CLEFT PALATE; WITH CASES ILLUSTRATING THE NEW OPERATION OF STAPHYLORAPHY.

By WILLIAM FERGUSSON, Esq., F.R.S., Professor of Surgery in King's College, London, and Surgeon to King's College Hospital.

(Concluded from page 27 of last Number.)

THE following cases illustrate many of the general observations already made, and afford evidence of the utility of the practice inculcated.

CASE I. D. P., æt. 17. The details of this case are given in vol. xxvii. of the *Medico-Chirurgical Transactions*. Since that publication, I have repeatedly seen this gentleman, in whom the benefit of the operation has been more strikingly evinced than in any other of my patients. This I attribute, in a great measure, to his zeal in the study of elocution.

CASE II. Miss W., æt. 18. The particulars of this case also are given in the volume above referred to. The improvement in speech, since the operation, has not been remarkable. The palate itself has been rendered more perfect than in the preceding case; but, from timidity or want of energy, the lady has taken little or no advantage of the improved condition of the parts.

CASE III. G. D., æt. 18. The fissure extended through the soft, and the greater portion of the hard palate; and the soft parts were so narrow, that I hesitated in recommending an operation. On the 4th of January, 1845, I operated on the patient: in addition to making the incisions devised by myself, I dissected the soft tissues on each side of the hard palate from this part of the fissure, in accordance with the directions of Dr. J. M. Warren; and, by this proceeding, was enabled to close the whole gap at once. Sloughing took place throughout the greater extent of the junction; and, on the fifth day, the fissure was wider than ever, the margins on each side, between the stitches, having given way. The operation was a complete failure; and I attribute this result to the ligatures having been placed too near to each other, and drawn too tight, so that sufficient circulation was not permitted.

Case iv. J. T., æt. 23. This patient was sent to me by Mr. Tuson, of the Middlesex hospital. That gentleman had operated three times upon the case, in accordance with the practice of Roux, but without success. A narrow point of junction had been gained about the middle, which, by the movements of the sides, had become gradually elongated, so as to resemble a piece of thread, three-fourths of an inch in length, stretched between the two sides of the fissure. The cleft had originally been limited to the soft palate; and, although the margins had been three times pared, they still seemed sufficiently broad to sanction the hope of success from my own proceeding. On the 23rd of April, 1845, I operated; and the union was perfect throughout, with the exception of a small aperture in front, a little larger than might admit the point of a probe. In paring the edges, I left the transverse band untouched; but came so close upon its roots at each side, that it could not afterwards be recognized.

Case v. S. S., æt. 22. The fissure extended through the soft palate, and nearly one-half of the hard. On the 8th of May, 1845, the soft parts were brought together, and the union was, in due time, complete. Three weeks afterwards, the soft structures were dissected from the hard palate, and brought together in the middle. On the third day, when the stitches were removed, the union seemed perfect; but in two days more the junction opened; and, ere long, as the soft parts became united to the bones, the orifice was as wide as ever. The union of the soft velum remained perfect.

Case vi. W. F. G., æt. 24. The extent of the fissure was about the same as in the last case; and the soft parts were thin, narrow, and remarkably mobile. The operation was performed on the 8th of October, 1845. The spasm of the muscles, when the parts were touched, was so great, that the preliminary incisions were not so fully carried out as I desired; nevertheless, union took place throughout the whole extent of the soft palate. An oval hole remained in front, where, owing to the flatness of the osseous roof, it was not deemed advisable to attempt an operation. An obturator was afterwards applied by Mr. Saunders, with the result of obviously improving the articulation.

Case vii. J. B., æt. 11, had a fissure in the soft parts only. T patient and his friends were particularly anxious that an operat should be performed. Although fearful that the boy might not sufficiently quiet, I trusted, on this occasion, to his assurance th would. He kept his word; and the proceedings were most sa torily accomplished. On the second day, union seemed perfect, removed the stitches; but during the subsequent night, the separated, and the gap was as wide as ever. I attribute the fa this case chiefly to the removal of the stitches at too early Probably, during sleep, or in taking food, the parts had b stretched, and the delicate adhesions had given way.

Case viii. G. B., æt. 16. The fissure extended through and the greater portion of the hard palate. An operation, the soft palate, was performed on the 16th October, 1845. plete success. An obturator was afterwards adapted to t and the improvement in voice and speech was very satisfa patient, like most others similarly affected, had a hare-l

which had been operated on in early life; the malformation was, however, still very marked. Another operation was performed some months after that on the palate, with the effect of greatly improving both the speech and appearance. Mr. Saunders, who constructed the obturator, tells me that he has recently seen this gentleman in consequence of some modification of the apparatus being requisite, and that the result of our conjoint proceedings is all that could be desired.

Case IX. C. T., æt. 16, had a fissure limited to the soft palate. A completely successful operation was performed on the 8th of December, 1845. This patient was brought by Mr. T. A. Richards, of Green-terrace, Camberwell, to my friend Mr. S. Lane, of Grosvenor-place, who, knowing my interest in such cases, kindly placed her under my care. I had the advantage of being assisted in the operation by both of these gentlemen.

Case X. W., æt. 26. The cleft extended through the soft parts only. The operation was performed on the 1st of March, 1846, and was followed by complete union, excepting in the two portions of the uvula, which were subsequently united by paring their edges, and retaining them in apposition by a single stitch. The non-union, at first, of the two parts of the uvula, I attribute to the soft parts dropping so much upon the root of the tongue, as to be disturbed by the movements of that organ. The voice and speech were soon remarkably improved in this case.

Case XI. T. S., æt. 26, had a cleft extending through the soft, and one-half of the hard, palate. The operation was performed on the soft parts, 28th October, 1846, and was followed by perfect union. An obturator was used to fill the aperture in front, from which great improvement in voice and speech resulted.

Case XII. J. M., æt. 18, had a wide fissure in the soft palate. An operation had been performed some months previously, on the old plan, which had completely failed. My own process was resorted to, March 24th, 1848, with perfect success. The intellect of this patient was not of the brightest kind; and, although some improvement in the tone of the voice was perceptible, there was little amendment in his speech when he was last seen, some months after the operation.

Case XIII. J. H., æt. 16. The fissure was limited to the soft velum. The operation was performed on the 8th August, 1848; and the union was perfect. The voice was considerably improved; but the patient left town too soon to permit a judgment to be formed regarding his speech.

Case XIV. T., æt. 29, had a very wide fissure in the soft palate, extending also through about three-quarters of an inch of the hard; the soft parts were very narrow and mobile. An operation was performed, 20th September, 1848, in which the soft structures were dissected from the bones, and brought together in the mesial line. The soft velum united satisfactorily, but the uvula remained split, seemingly for the reason stated in Case X: a small slough formed in the tissues dissected from the bones, in the site of one of the stitches, and an aperture remained in this situation. I am still in doubt whether it will be preferable to apply an obturator here, or to repeat the operation, in order to close the circular opening now remaining. My friend, Mr. Henry Lee,

did me the honour, two years previously, to submit the case for my opinion, when I advised that an operation should not be performed. I was led to this decision by considering that there was little probability of the parts being united in a satisfactory manner. Moreover, the patient spoke so remarkably well (under the circumstances), that there seemed no great hope of improvement, even were the operation successful; and, in addition, I was of opinion that no improvement in hearing would result. This patient, like many others with this malformation, was very deaf, and more desirous of relief in this respect than as regarded the palate or speech. She assented at the time to the opinion given; but, after the lapse of two years, having still a hope of her hearing being improved, determined to have the operation performed on her palate. Mr. Lee again desired that I should see her; and, after my explanation had been given as to the probability of a failure, she requested that an operation might be performed. I undertook the proceeding with great reluctance, but did every thing in my power to ensure success. Contrary to my expectations, union took place as above narrated; and I have now no doubt, that after joining the two portions of the uvula, (a proceeding which may be considered as almost certain of success,) and the adaptation of an obturator, should that be preferred, there will be considerable improvement. The patient has not yet returned to town to have the roof of the mouth made perfect; and I am unable to say how far her hearing has been benefited. She fancied, within a fortnight after the operation, that there was an improvement; but I have little hope of her being able to dispense with the use of an ear-trumpet.

Case xv. M. G., æt. 18, had a cleft extending through the soft palate, and about half an inch of the hard. In the operation, which was performed on the 16th October, 1848, an attempt was made to close the aperture in the bones, as well as behind; but a portion of one side sloughed, and the soft velum alone was permanently closed. A plug of caoutchouc was subsequently fitted to the aperture; and when I last saw the patient, (a few days ago,) her voice was greatly improved.

It may thus be observed, that, out of fifteen cases, I have been suc cessful in closing the soft palate in thirteen. One of the cases o failure was the third in which my own peculiar practice was employe It was a most unfavourable example, and one which, in all probabil would not have admitted of any remedy by the ordinary plan. Pr bly I should not now attempt an operation under such circumstan

In addition to these cases, I have permission to refer to which have been treated in accordance with my views.

Case xvi. G. L., æt. 20, who had a simple fissure in parts, was operated upon in King's College Hospital, by my c Mr. Partridge, in August, 1845. There was only partial unio first instance; but a second operation, some months afterwar the gap nearly through its whole extent.

Case xvii. G. L. R., æt. 18, had a simple fissure in the and was operated on successfully, in King's College Hospi ary, 1846, by my then colleague, Mr. Simon.

Several friends have kindly favoured me with accounts o

they have treated in a similar manner; and the particulars are here subjoined, exactly as they have been furnished to me.

Case xviii. Mr. Bowman writes thus:—"My dear Fergusson,—The case of Staphyloraphy, of which you wish a short account, was that of a young medical man, now practising in the south of England, upon whom I operated twice; at first unsuccessfully, according to M. Roux's method, and without lateral incisions; but afterwards with a successful result, after making the divisions of muscles, as you recommend.

"The fissure extended through the whole of the soft palate, coming quite up to the bone.

"On the first occasion, I think in 1842, I simply pared the edges and brought them together, and enjoined him not to swallow till the third day; in this respect adopting the views of the distinguished French surgeon, some of whose operations I had previously witnessed in Paris, and one in London. During two days, the stomach was much disturbed with repeated vomiting; and though the wound appeared to be agglutinated when the stitches were removed on the fourth day, ulceration gradually extended from the top to the bottom, and the whole parted asunder, to my great regret.

"In 1845, after the publication of your views on this subject, this gentleman again applied to me, and expressed a strong desire that I should make another attempt to procure union. I had already made up my mind to adopt, on the next opportunity, your proposal with regard to the preliminary section of the muscles, and also to give food on at least the second day, if not earlier. I accordingly noticed the situations in which the lateral halves of the palate were dragged, during his efforts at movement in the throat, while the mouth was open, and with your well-contrived knife made the requisite division, I suppose, of the levator palati on each side, with the immediate effect of causing the flaps to hang more loosely towards the median line. I then passed three ligatures. This was at ten A.M., and he had previously had his usual breakfast. He thought he could easily manage without food till the next morning, and accordingly took none; but I was then sorry to find him suffering again from repeated vomiting, with severe sick headache, to which he was liable, and I was almost ready to abandon hope. I gave him a small dose of calomel, and some beef tea; the vomiting recurred seven or eight times during the day, but left him towards evening, and did not return. He assured me that neither the effort of vomiting, nor that of swallowing, caused any dragging upon the threads, as far as he could judge from his sensations. To be brief, these apparently untoward circumstances had no injurious effect on the process of union, which seemed to take place as perfectly as possible, and in the whole extent, except a minute space next the hard palate, where a kind of pin-hole remained and still exists, but without any bad influence on his voice.

"Since the operation, his voice has considerably improved; but he has still some peculiarity and indistinctness of utterance, which will probably now be permanent, as it has resisted the efforts of a well-known teacher of elocution to overcome it.

"You ask me for my opinion of the anatomical grounds on which you have founded your improved method of performing staphyloraphy.

I think them in all respects sound, and likely to stand the test of experience; at least I intend to operate according to the plan you have so ingeniously framed upon them, when opportunities present themselves. —Believe me most sincerely yours, W. Bowman."

"14 Golden-square, Nov. 23, 1848."

I had the honour of assisting Mr. Bowman in the operation which he first performed, and cannot speak too highly of the able manner in which it was conducted. There appeared to be, at the time, every prospect of success.

My friend and former pupil, Mr. Robert R. Storks, has given me the following interesting narrative:—

Case xix. "M. J., æt. 20, applied to me in June, 1846, for relief from congenital fissure of the soft palate, which, on examination, presented the following appearances:—The fissure extended directly in the mesial line, from the posterior edge of the horizontal plates of the palate bones to the extremity of the uvula, which was divided into two nearly symmetrical halves. The flaps on either side were ample, and during deglutition lay almost in apposition, but, on irritating the fauces, they were drawn powerfully upwards and outwards, and were with difficulty distinguished from the surrounding mucous membrane. Her articulation was very imperfect; and, during mastication, particles of food passed into the posterior nares, occasioning great distress.

On June 21st, Staphyloraphy, after the method recommended by Mr. Fergusson, was performed, the levator palati on each side being divided. After the division of these muscles, the flaps were nearly in apposition, although there had been considerable loss of substance from the paring of the edges of the fissure; nor could I excite, on either side, any contraction by irritating the parts with the finger. As no other muscular fibres appeared in this case to exercise any influence opposed to the union of the parts, I did not interfere with either the palato-glossi or palato-pharyngei muscles. Four stitches were required to bring the parts together; one of which I removed on the second, the remaining three on the third day, after the operation. Beef tea and wine were allowed after the first twenty-four hours had elapsed. On the fourth day she had a severe attack of sore throat, accompanied with ulcerated and erythematous redness over the palate; on the fifth day it was subsiding; and it was, after a week, difficult to say that an operation had ever been performed. It would be out of place for me to make any observations upon the case here narrated; but I cannot refrain from bearing my unbiassed testimony in favour of the views laid before the profession by Mr. Fergusson, in the *Medico-Chirurgical Transactions*. Having had opportunities of witnessing the performance of this operation, in the hands of some of the most eminent surgeons of the day, including its originator, M. Roux; and subsequently, through the kindness of Mr. Fergusson, having examined his preparations, and assisted him in many of his operations, I cannot too strongly express the opinion, that in my humble judgment, the relief of the [illegible] deficiency it is proposed to remedy, is, by the latter proceeding, ensuring that the soft parts are sufficiently ample to meet in the middle, rendered as certain of success as the operation for hare-lip. [illegible] sive condition to which the parts are reduced, by the di[illegible]

muscular fibres, the effusion of lymph above the palate, acting as a splint and rendering motion impracticable, combined with the greater amplitude given to the soft parts by the partial and temporary destruction of their arched form, may be enumerated as perhaps the principal advantages of this proceeding. In addition, the paralyzed condition of the muscles influencing the wound, enables the surgeon to allow the patient food at a much earlier period than after the old operation,—a matter of no slight importance in some constitutions. Two things are essentially necessary before any individual is competent to give an opinion upon this subject: 1st. That he should have seen and carefully examined the preparation upon which Mr. Fergusson founds his views; and 2ndly. That he should have witnessed the performance of the operation in good hands. The instruments necessary are few and simple; but they require that, for the absence of which no mechanical ingenuity will compensate—delicate manipulation. I had another opportunity of partially putting into practice this operation in a very difficult case, in which the plan was as successful as I could anticipate:—A female had been left, after syphilitic ulceration, with an aperture in the soft palate, admitting my fore-finger. By means of the knife recommended by Mr. Fergusson, I was enabled to divide the levatores palati nearly to their required extent; the edges were pared, the aperture being made, by the incision, elliptical rather than circular, and the parts brought together. The wound united except at one point, into which, when cicatrization was complete, I could only introduce the ordinary drawing pencil. The proceedings afforded the patient great relief; but circumstances prevented me from following out the case, and I have consequently been unable to remedy the existing deficiency."

Mr. Storks gratified me by asking my assistance in the first of the above cases; and, in my opinion, the operation could not have had greater justice done to it. It is with me, as with all others who have the pleasure of that gentleman's acquaintance, a matter of deep regret, that a young surgeon of such promise should be prevented, by ill health, from following a profession in which he has already so ably distinguished himself.

Case xx. My friend Mr. Quain thus writes to me:—

"Keppel Street, 20th Nov. 1848.

"My dear Sir,—After having carefully examined the preparation which you kindly showed me, as well as an imperfect one in the Museum of University College, I became so well satisfied of your suggestion, respecting the division of certain muscles being likely to prove a real improvement in the operation for cleft palate, that I resolved to put it in practice on the first opportunity. Accordingly, in operating on a young lad a short time ago, I made the preliminary sections which you recommend, and the case has been completely successful. I look upon your addition to the operation in question, as a very happy application of the plan of dividing muscles, now so advantageously resorted to in some other cases.—I am, my dear sir, faithfully yours, R. Quain."

"Prof. Fergusson."

In a visit to University College hospital, shortly after the above date, I had the satisfaction of seeing the patient, who was about to pass from under Mr. Quain's immediate notice.

Case xxi. My friend Mr. Avery has given me the following
culars:—"Mr. Haddock, æt. 22, a stout, healthy-looking, young f
from Sutton, in Cambridgeshire, came to me in March last, with
palate. It commenced half an inch behind the hard palate,
extended exactly through the middle of the soft palate and uvula,
irritating the parts sharply, both flaps almost entirely disapp
against the sides of the fauces; but when he swallowed, they m
the mesial line. The operation was performed on the 20th of
according to the description given in your paper, and the sugge
you were kind enough to make, when you showed me the preparat
the dissection in your possession. The edges were freshened with
facility by transfixing the flaps, at about a line from their edges
a small pointed bistoury. The division of the levator palati w
free, that the round extremity of your curved knife could be seen
ing above the mucous membrane lining the under surface of the p
just as the tenotomy knife is seen under the integuments, in the
sion of tendons. The palato-pharyngeus was also freely divided w
bistoury and curved scissors. Although the motions of the flaps
not entirely destroyed, it was quite clear to all present that they
very greatly diminished, particularly at the posterior part of the
and uvula; and that, *comparatively*, the flaps could be held and
down, like a piece of loose integument. Five different coloured s
were passed, beginning from before and proceeding backwards
afterwards tied in the same order. Very little movement of th
palate could then be produced by irritating the parts sharply,
lay almost *flat* and loose over the tongue, instead of being *arched*
had beef tea, gruel, and a little sherry, on and from the first day
which was very grateful to him, he was allowed to sip a little thin
whenever he liked; besides this, he had an enema of beef tea,
glass of sherry in it, every night and morning. After forty-eight
the first and third sutures were removed; on the third day, the
on the fifth day, the second; and on the sixth, the fourth an
He suffered neither constitutional disturbance nor distress; a
pulse was never above 65. Small ulcerated spots only remained
the sutures had been. They soon all closed, excepting one.
tenth day he had meat and porter; on the following day he went
London, and on the twelfth returned home, with a small supe
unclosed spot remaining. I saw him six months afterwards, and
him a much smarter man; he had married, and his pronunciatio
quite distinct, although much of the nasal twang remained."

Case xxii. Mr. Avery also writes:—"Very soon after, I a
Mr. Yearsley in a case so precisely similar to the above, that th
scarcely an observation to add to it. Mr. Yearsley had seen the
tion performed upon Haddock; and the treatment employed, a
result, induced him to follow the same plan in every particular.
age of the patient, the state of his health and strength, the t
cure and termination, were, as nearly as could be, the same.
witnessing these two cases, which were so completely successful,
your method was adopted, and having seen the operation perfor
M. Roux, and others, in Paris, and by surgeons of the highest em
in London, where other methods were followed, with total fail

only partial success,—I think it is but justice to place the happy result to the score of the great improvement you have introduced, by the division, more particularly, of the levator palati muscle. By that division the adverse action of the muscles is greatly diminished, and the flaps are cut in such a manner that they fall by their own weight almost *flat* over the tongue, instead of being held up tightly in an arched form by the upper surface of the soft palate; and I cannot help thinking, that when well performed, and in favourable cases, the success of this operation will be, for the future, the rule instead of the exception. I tried every variety of complicated instruments on the subject, before the operation, but can testify that the very simple means you use and have described to me are incomparably easier of application, and more effective, than any I have seen."

Both of the gentlemen who treated these cases, politely afforded me an opportunity of seeing the patients; and in each, I felt satisfied that my views had had justice done to them.

Case xxiii. Mr. Skey, of St. Bartholomew's Hospital, has informed me of a successful example occurring in his private practice.

Case xxiv. Mr. Shaw, of the Middlesex Hospital, tried the method in a case which came under his care in that institution. The proceeding was unsuccessful,—a result at which I was not astonished; for the condition of the parts was by no means favourable for any operation.

Thus, then, it will be observed, that out of twenty-four cases, in which the practice recommended by me has been put into execution, it has proved of advantage in twenty-one. Many of these were most unfavourable instances; and, in three of the successful cases, the ordinary operations had already failed.

16, George Street, Hanover Square, Jan. 1849.

AN ACCOUNT OF SOME EXPERIMENTS ON THE REMEDIAL ACTION OF ELECTRICITY.

By H. BENCE JONES, M.D., F.R.S., Physician to St. George's Hospital.

The report on the Treatment of Diseases by Electricity in the Guy's Hospital Reports for 1841, by Dr. Golding Bird, is so full, and the lectures which he delivered at the College of Physicians in 1847, represent his results as so favourable, that I have many doubts whether the opposite estimate of its value, to which my own experiments have led me, may not be owing, either to some defect in the mode of applying the remedy, or, which is more probable, to a too limited experience of its effects.

Whatever the cause of the difference may be, a short statement of the results, which were obtained in St. George's hospital, may assist other experimentors in arriving at the truth regarding the influence of electricity in the cure of disease.

In 1843, Dr. Seymour, who had great confidence in the value of electricity as a remedial agent, applied to the weekly board of St. George's hospital, to appoint one of the senior pupils to take charge of the electrical apparatus, and of the application thereof. This had hitherto been for years left entirely to the care of the surgery-man. Dr. Thomas

Chambers and I were appointed; and, as I was anxious to mak
experiments on this subject, we agreed to record the most inte
cases, and to apply the electricity ourselves for a year.

At first a plate machine and Leyden jar were used; but, for
two-thirds of the cases, the magneto-galvanic apparatus, made by
of Edinburgh, was alone employed.

The patients were electrified according to the orders of the phy
or surgeons, some daily, some thrice, some twice a week. The
electricity was usually continued from six to ten minutes, ra
fifteen minutes, according as the patients could bear its applicat

The number of the cases thought fit to be recorded were twenty
Those may be thus arranged:

Diseases.	Number of cases.	Results.		
Paraplegia	3 cases.	3 no benefit.		
Hemiplegia	6 cases.	4 no benefit.	2 slight benefit.	
Lead Palsy	3 cases.			3 good
Wasting of the Deltoid	2 cases.	2 no benefit.		
Paralysis of one arm or hand.	6 cases.	3 no benefit.	2 slight benefit.	1 rapi
Chorea	1 case.		1 slight gain.	
Pain in the Sacrum	1 case.	1 no benefit.		
Paralysis of the Bladder, ...	1 case.		1 slight benefit.	
	23 cases.	13 no benefit.	6 slight benefit.	4 good

Closer examination of these cases will not make the influ
electricity appear at all more favourable.

I. CASES WHICH IMPROVED.

The history of the patient who improved most rapidly, was as f
A cabman, forty-five years old, left the hospital five weeks pre
using a crutch, having had his leg broken. A few days after l
out, he perceived a tingling deadness in the fingers, and in ten
had lost the use of the wrist and fingers, so far as to be unable
on his hat, or tie his handkerchief. He had now left off his cr
ten days, but without any benefit. His health is quite good.

To be electrified three times a week in the left arm.

After one application of the electricity, he was able to tie hi
kerchief, and the numbness of the hand was much diminished
came only once more to be electrified, after which he continued
prove rapidly without any remedy.

Of the three cases of lead palsy that improved, one received
from electricity, after rest had been fully tried without effect. Anot
the influence of the electrical treatment tested in the following

He had lost the power over both hands for three months. T
hand was the worst. The left hand was put on a splint for a
while, at the same time, the right was galvanized every other d
the end of the month, the right hand was still the worst, but th
ence between the two hands was not so great as formerly. Th
was then left off the left hand. When it had been off ten d
stated that the right hand was more improved than the left;
then able to use both hands in dressing, and to feed himself w
right one, which alone was still electrified. In another fortni
left the house, having taken the balsam of Peru during the two
he was an in-patient.

In this case, the worst hand, being electrified, gained in power more rapidly than the best hand, which was kept on a splint; and when both were free, and one electrified, that one most quickly improved.

The six cases that improved slightly, present little worthy of notice. The improvement was so slight, that it was very doubtful whether it were owing to the treatment.

One of the cases of loss of power of the arm is worth mentioning, as in it the power of the shock to produce ecchymosis was very distinctly shewn.

A woman, twenty-six years old, thirteen months previous to her admission, fell on the left hand. The hand soon after swelled, and in three or four days she was unable to raise it. She gradually got much better, but some dead bone was removed from the palm of the hand.

For the last four months she has been losing power in her arm. She is now unable to lift her arm at all, and the hand is swelled. The catemenia are regular, and her health is tolerably good.

Galvanic electricity was used to the fore-arm and wrist: for the first few days she thought she had more power over the fingers, but was still quite unable to lift the arm. More powerful treatment was used, but considerable œdema and ecchymosis of the fore-arm and wrist rendered it necessary to discontinue the galvanism. It was a month before the ecchymosis was removed. The œdema continued. As she still declared that the galvanism had benefited her, it was resumed, and in four days the ecchymosis was again produced. The treatment was continued, with less power, for three weeks, when she left the hospital but little improved.

II. Cases which did not improve.

The cases in which no benefit was derived from the electricity, formed much the largest class; and, in some of these cases, I was much disappointed in finding no gain at all from the treatment. The following case shows that little benefit must be expected from electricity in hastening the recovery of power after hemiplegia.

A conductor of an omnibus, 30 years old, had pain in the head for a month, chiefly over the eyes, and indistinctness of sight for two weeks; when suddenly, without any loss of consciousness at first, he became palsied on the right side, seventeen weeks before his admission into the hospital. Shortly after the palsy came on, he says he was stupified; and that the mouth was at first drawn to the right side. When admitted, he was improving. Galvanism was ordered to be applied to the muscles of the arm, and from the cervical plexus to the extremities of the fingers. He was electrified every day for twenty-five days, with five exceptions. During this time, the leg which was not electrified became stronger, and he was able to walk far better than on his admission. The arm was not at all better when he left the house than it was when he was admitted.

I regret that the experiments which were made do not bear at all on the question at issue between Dr. Marshall Hall and Dr. Todd. The magneto-electrical power was used as strong as it could be borne by the patient; and the motion of the muscles was only observed as a test of the degree of power that could be applied. The two following cases of paraplegia shew that, when the greatest power was employed, the paralyzed limbs were not thrown into action.

Elizabeth Gray, æt. 13, whose general health was very good, had paralysis of the lower limbs since she was sixteen months old, ch affecting the right leg. Sensation did not appear to be at all diminis She was ordered to be electrified three times a-week, the right only being acted on, in order to test the treatment. At the end month, no benefit having been obtained, both legs were electrified. the end of two months no benefit resulted, the utmost force of the chine being unable to produce any motion in the muscles of the leg. The health was quite good. At the end of the third month she the hospital, without having received any benefit. Tincture of ca rides, and ergot of rye, were each administered in full doses; the for a month, the latter for a fortnight, without any appreciable effe

Ann Tolman, æt. 40, a very hysterical ladies' maid, admitted Ma 1843. On July 27, I received the following account: She says tha awoke about four months ago, having been quite well previously, loss of the use of the legs, arms, and muscles of the neck. Her h and feet were so tender, that she could hardly bear them t washed. The loss of power, and increase of sensibility, were wors first in the hands than in the feet. She has recovered the use o neck and the hands, so as to work a little with the needle. She very little power of motion of the legs; the right one is rather moveable than the left. There is some loss of sensation in the l for when she does not see it, they can be touched without her fe it; but she screams when she sees that any attempt is made to touc or move her. She says it does not hurt her when the legs are tou but "it makes her feel a sort of terror, and then she screams."

The legs are both flexed, and strongly contracted, and the feet tu down; but she says that, at one time, they were quite straight, an stiff, that she could not bend them. They cannot now be straighte

On the first day, the electricity was applied from the thighs t toes; and it appeared to make no impression whatever, even when power was used. That is, I could not make out that there was difference, whether the sponges, by which contact with the body made, were attached to the machine or not. Attached, or unattac she complained excessively of the pressure of the sponges, whe pressed lightly or firmly; but she did not at all complain of any pain when the electricity was applied, and there was no starting of limbs as contact was made and broken. In the right leg alone, a quivering of the muscles, during the treatment, could be seen.

The second day the electricity was passed from the spine to the high up in the neck, and low down on the sacrum. Still I could satisfy myself that she felt anything of the electricity, although complained excessively of the pressure.

When the electricity was applied to the arm, she felt it; and movement of the limb also showed that she did so, beyond mistake.

For five weeks the electricity was continued. The power of the increased without their being electrified, and the power of the legs also rather better; but I do not believe that this was due to the tricity. In consequence of some misconduct she was then sent o the house.

These are the most interesting of the cases I observed. At the

of eleven months, I reported to the weekly board the unsatisfactory conclusion of the experiments we had made. During that period, I am certain that the remedy was fairly tried on a small number of patients. If it had been more fully tried, I might, perhaps, have formed a higher estimate of the influence of galvanism in the cure of disease. But in twenty-three of the recorded cases, there was only one slight case, in which the improvement from the treatment was rapid; and only three others, in which I was satisfied that benefit was slowly derived from it. These three were all cases of paralysis from lead.

ON LARYNGOTOMY, AND TRACHEOTOMY, IN ACUTE AFFECTIONS OF THE LARYNX.

By PRESCOTT HEWETT, Esq., Assistant Surgeon to St. George's Hospital, and Lecturer on Anatomy.

In Acute Affections of the Larynx, the surgeon is sometimes suddenly called upon to make an opening into some part of the air-passages, in order to relieve the urgent dyspnœa which has supervened.

Laying aside all considerations about the medical treatment of these cases, my intention is to examine solely the merits of the two operations, Laryngotomy and Tracheotomy, by which it is usually sought to afford this relief.

Of the two operations, that in the trachea is the one selected by most surgeons of the present day. In the following observations, however, I shall endeavour to prove that, not only is this preference not founded on just grounds, but that it would be advisable, in such cases, to make the opening in the crico-thyroid region.

Acute affections of the larynx, terminating in effusion, present, it is well known, a very great difference in the adult and in the child; the effusion, in the former, taking place by far most frequently in the sub-mucous tissue; whereas, in the latter, it is usually poured out on the free surface of the mucous membrane. In these cases, in the adult, the effusion is purely laryngeal; in the child, it is, most frequently, not only laryngeal, but also tracheal.

This marked difference in the localities of the effusion, at these two periods of life, at once points out two great divisions, in which the surgical treatment will necessarily be very different. My intention is to confine, for the present, these remarks to one of the divisions only, that of the adult period.

Effusions in the sub-mucous tissue of the larynx, it matters not of what kind, or how produced, are strictly limited to the parts above the rima glottidis. This fact, already pointed out by several pathologists, has not, I think, been sufficiently dwelt upon by practical surgeons.

That the effusion is thus invariably limited to this region, may be proved by morbid anatomy, by experiments, and by the anatomical structure of the parts. In the following cases, especial notice was paid to the limits of the disease, at the post-mortem examinations, some of which were made several years ago.

A man, æt. 50, was attacked with diffuse cellular inflammation scalp, after an injury of the head. The inflammation subsequ spread to the head and neck; urgent dyspnœa suddenly superv and he died. A quantity of yellow-coloured serum and lympl found in the cellular tissue of the neck, and both aryteno-epig ligaments were much thickened by effusion of serum in their sub-m tissue. The disease had not spread beyond this part of the laryn

A woman, æt. 39, suffering from a violent attack of sore throat suddenly seized, in the night, with urgent dyspnœa, and died. Be the marks of inflammation about the throat, the sub-mucous ce tissue of the epiglottis, aryteno-epiglottic ligaments, and ventricl the larynx, was much inflamed, and infiltrated with a large quanti recently effused lymph. The mucous membrane itself was infla and several small ulcerations were found in the region of the ary epiglottic ligaments. The mucous membrane of the trachea was i increased in vascularity; but the effusion of lymph was strictly lin to the parts above the inferior chordæ vocales.

A man, æt. 65, died with symptoms of suffocation, having affected with diffuse inflammation of the head and neck, followin injury of the head. The laryngeal mucous membrane of the epigl was of a brilliant scarlet colour; increased vascularity also existed a the mucous membrane of the larynx itself, and there was slight œd of the aryteno-epiglottic ligaments. The mucous membrane of trachea was, throughout, of its natural colour and thickness.

A man, æt. 45, died of extensive inflammation of the cellular sue about the neck. The epiglottis and aryteno-epiglottic ligaments very much thickened, by an effusion of lymph and pus in their mucous tissue: this effusion extended as low as the upper margin the inferior vocal chords, and there it suddenly ceased. The p below this point were quite healthy.

A man, æt. 53, admitted into the hospital with a scalp wo subsequently died of diffuse inflammation of the head and neck. sub-mucous tissue of the left aryteno-epiglottic ligament, was m thickened by infiltration of serum. All the other parts of the air sages were quite healthy, with the exception of some slight vascula of the mucous membrane.

In a man, æt. 55, who died of diffuse cellular inflammatio the neck, a large quantity of lymph was found in the sub-mucous ti of the left aryteno-epiglottic ligament, and left superior chorda voca but there was no diseased appearance on the opposite side. The sac of the larynx were quite healthy, and the mucous membrane of trachea presented only a slight increase of vascularity.

A woman, æt. 27, admitted into the hospital with nodes on forehead, was suddenly attacked with violent sore throat; the flammation spread rapidly to the neighbouring parts; urgent dyspn made its appearance, and she died. The mucous membrane of the palate and back part of the tongue was of a very dark colour, with tensive effusion of lymph in the sub-mucous tissue; these appearan were also very much marked in the glosso-epiglottic and aryteno-glottic ligaments. The mucous membrane of the trachea was increa

in vascularity, and its surface was covered with a thick tenacious mucus; but the membrane itself was not thickened, the effusion of lymph ceasing abruptly at the inferior vocal chords.

A man, æt. 28, was attacked with sore throat; erysipelas of the head and neck subsequently appeared, urgent dyspnœa supervened, and he died. The cellular tissue at the root of the tongue, that of the epiglottis, aryteno-epiglottic ligaments, and of all the parts above the inferior chordæ vocales, was extensively infiltrated with lymph and pus. The aperture of the glottis was all but blocked up by the thickened vocal chord. The mucous membrane of the larynx was in a sloughy state; that of the trachea was much increased in vascularity, but not in the least thickened.

A man, æt. 45, was attacked with sore throat; the inflammation spread to the neighbouring parts; violent paroxysms of dyspnœa supervened suddenly, and during one of these laryngotomy was performed, but he died thirty-six hours after the operation. The sub-mucous tissue at the root of the tongue, and of the glosso-epiglottic ligaments, was much thickened by a large quantity of recently effused lymph: the epiglottis and aryteno-epiglottic ligaments were also much thickened by a similar effusion. The cellular tissue of the larynx was thickened, and infiltrated with serum only. This thickening ceased abruptly at the margins of the inferior chordæ vocales, the parts below being simply congested and covered with mucus.

A man, æt. 31, who was in the hospital for enlarged cervical glands, was attacked with erysipelas of the head and neck; the tonsils became enlarged, urgent dyspnœa suddenly made its appearance, and he died. The sub-mucous laryngeal tissue of all the parts above the inferior vocal chords, was extensively thickened and œdematous; and the disease was strictly limited to these parts, the mucous membrane of the trachea being healthy.

The appearances above related were the same in several other post-mortem examinations, the details of which I think it quite unnecessary to give here. In all of them, whatever may have been the state of thickening above the inferior vocal chords, these chords themselves presented their well defined, sharp margins, and, in many instances, their glistening appearance, the mucous membrane covering them not being in the slightest degree affected. In none of the cases, was the mucous membrane of the trachea thickened.

That such are the precise limits of the effusion, in most cases of acute affections of the larynx at the adult age, can also be proved by some very simple experiments. If a larynx and trachea be removed and kept in water for some little time, the cellular tissue of all the parts above the inferior chords will become œdematous and swollen, whereas, the parts below these chords will retain their usual appearance, the chords themselves presenting, in all cases, their well known glistening appearance. So, too, if either water or air be injected into the cellular tissue of the larynx, it will be found not to pass beyond the upper margins of the inferior chords; further than this spot, it cannot be forced downwards.

The explanation of this limitation is easily found in the anatomical structure of the larynx and trachea. Above the inferior vocal chords, the mucous membrane is connected to the subjacent parts by means of

a loose cellular tissue, which is very abundant, especially in the r
of the aryteno-epiglottic ligaments, whereas the connections of th
cous membrane lining these chords, and the trachea, are very firm
cellular tissue here, being very short and very dense, forms so f
bond of union, that it is difficult to separate the mucous membran
the parts lying below it.

The late Mr. Liston, who was a staunch advocate for the operat
tracheotomy in most affections of the larynx, where an operation w
quired, admitted, in some observations published in the *Lancet* of
" that the high operation in the crico-thyroid membrane, laryngo
in fact, might answer in cases where there is obstruction in the
glottidis, as where swelling has followed a scald of the glottis."
admission thus made by Mr. Liston for these cases of accident,
to be applied to most cases of acute laryngeal affections in the
After childhood, it is, comparatively speaking, very rare to fin
obstruction any where but at the rima, or immediately above thi
gion; it matters not whether the effusion has been preceded
accident or not, its locality is precisely the same in both instances;
limited in the one, as well as in the other, to the parts above the

Although the effusion be above the rima, in practice it will be f
in most instances, that the obstruction for which the surgeon is
upon to operate is at the rima itself. The sudden and urgent dysp
coming on in paroxysms, at once shows that this obstruction is ca
by spasms of the muscles in this region. This too is proved by
mortem examinations; for in many cases, where patients have di
sudden suffocation, the effusion has been so slight as to present
or no obstruction: certainly not sufficient to account for the s
toms. It is this spasmodic state which renders the operatio
laryngotomy of so much value: coming on, as it does, so sudd
and violently, it demands that the relief be immediate: the ope
in the air passages must, in many instances, to be of any avail
made, as it were, instantaneously: tracheotomy, it is well kn
cannot thus be performed with safety to the patient. A stri
instance of this nature came under my notice some years back.
young woman, who was affected with extensive syphilitic ulceratio
the throat, was suddenly one night attacked, no premonitory sympt
having been present, with most urgent dyspnœa; it was determine
the surgeon, who was close at hand, to perform tracheotomy; the
ration was well done, but some little time was lost in making the o
ing in the wind-pipe, in consequence of some venous hæmorrhage,
the patient, who made a slight rally after the introduction of
canula, soon died. At the post-mortem examination, the larynx
found to be quite healthy; the urgent dyspnœa had been caused s
by spasm of the glottis, induced by the irritation which was going
in its immediate neighbourhood.

Many surgeons object, I know, to this operation of laryngotom
acute diseases about this organ; they think it desirable that the o
ing should be made as far as possible from the seat of the inflam
tion, for fear of the canula becoming the cause of extension of
disease down the trachea. Such an objection it has, however,
shown, in the preceding observations, is not a valid one, inasmuc

the effusion in these cases does not extend beyond the loose cellular tissue of the larynx. Supposing the canula to excite some inflammation, the mucous membrane would be very slightly thickened, and an effusion of lymph might take place on its free surface; but this might be caused if the canula were placed in the trachea, just as readily as when the opening is made in the larynx. A canula placed in the larynx is not, however, likely to cause inflammation of any consequence there. This point I have particularly noticed in several post-mortem examinations. In a larynx in which a canula had been kept in the crico-thyroid region for thirty-six hours before death, there were no traces whatsoever of inflammatory action in this spot, notwithstanding that there was an abundant effusion of sero-purulent fluid above the inferior vocal chords. In another larynx, where the canula had been kept in the same region for forty-eight hours, and under similar circumstances, there were no traces of inflammation produced by the presence of the tube; neither was there any inflammatory action produced by the canula in a third case, in which it had been kept in the crico-thyroid region for several days; the mucous membrane, with the exception of the margins of the wound, not being even discoloured.

In the preceding observations, reference has been made to laryngotomy in the adult only; but there is a class of cases occurring,—and that not unfrequently, among children,—in which this operation is equally valuable. I refer to those cases where the little patients have swallowed either acids, or, more commonly, boiling water. Here the limits of the disease are just as well defined: the effusion following the accident, being in the sub-mucous cellular tissue, is strictly limited to the parts above the inferior chordæ vocales, and morbid anatomy shows precisely the same state of things as that which occurs most frequently in the adult; the urgent dyspnœa is in the same manner produced, in a great measure, by spasm of the glottis. In this class of cases, it may, I think, be said that laryngotomy is even more valuable than it is in the adult, owing to the much greater difficulty which naturally exists, in laying open the wind-pipe of a child.

Having thus pointed out the exact nature of the disease in these affections of the larynx, if we now proceed to weigh the respective merits of the two operations which may be resorted to, we shall find that either of them will serve for the relief of the urgent and distressing symptoms which sometimes accompany these cases. On the one hand, however, we shall have an operation, laryngotomy, which may, in most instances, be performed with great ease, and, as it were, instantaneously; and, on the other, tracheotomy, an operation, the difficulties and dangers of which are such, that all experienced operators and practical writers have thought it advisable to dwell upon them strongly,—so strongly, indeed, that it will be quite unnecessary for me to recapitulate them.

Such being the case, I shall close these observations with the two following general rules:

In adults, laryngotomy is, in cases of acute affections of the larynx, to be preferred to tracheotomy.

In children, laryngotomy is also to be preferred in cases where the obstruction has come on after swallowing boiling water, acids, or any other irritating fluid.

ON THE INTESTINAL DISCHARGES IN CHOLE

By E. A. PARKES, M.D., Assistant-Physician to University College Hospita

THE chemical and microscopic examinations of the discharges the alimentary mucous membrane, present certain difficulties, an liable to certain fallacies, which do not occur in the investigation constitution of the urine. Whatever abnormal ingredients may e the urine, must have been derived from the blood, and have p with more or less change imposed upon them, through the secretin tures of the kidney or bladder. But the excretion from the inte mucous membrane is, in health, mixed with a mass of extraneous m such as the debris of food, the excrementitious portions of certain tions, etc.; and, in disease, with the abnormal discharges indue medicines, or even with the medicines themselves. In the case of Cholera, however, many of these possible difficulties and erro avoided. The feculent contents of the intestines are, at an early of the disease, expelled; no solid food is taken, or, if taken, i tolerated by the stomach; the bile, and probably the pancreatic fl retained; and there is no fear of urine mixing with the stools, t kidneys are inactive. The Cholera dejections are therefore the pr of the mucous membrane alone, with the possible addition of c medicines, or of fluids, which, having remained on the stomach, an passed into the intestines, have been discharged nearly unaltered the following observations, I believe even these sources of erro been guarded against. In most of the cases I was aware of the ment which had been employed; and if any fluid that I obtaine found to contain an obviously extraneous and foreign ingredient, not make use of it.

The stools in Cholera, it need hardly be said, consist of tw distinct portions: of a colourless fluid, which is turbid, or, more u nearly clear, or perfectly transparent; and of a sediment, which is and of different physical characters, according to the period of th In several cases I have made analyses of the fluid, and have also m caused to be made, microscopic examinations of the sediment. following paper I shall first detail the chemical analyses of the natant fluid; and subsequently, the microscopic appearances cholera-masses in the same cases.

I. CHEMICAL EXAMINATION OF THE FLUID.

Two of these analyses were made by Dr. Garrod, the remain myself. I have shortened all details as much as possible; an not included negative experiments, unless of an important kind though it has not been possible to analyze, as I desired, all the passed during the course of a single case, it will be seen that my vations embrace all periods of the illness in different cases, an

[1] This seems to be the case with milk, which often is not rejected by the stomach, passes through the bowels so unchanged as not only to give the stool a milky ap and to present under the microscope multitudes of oil globules, but actually, after for some time, to form a kind of cream.

cate, with tolerable accuracy, the probable course of events in individual patients.

Observation 1. *First or second true rice-water stool of the algide stage, from a middle-aged man, who subsequently died.* Analyzed by Dr. Garrod.—The stool separated into two parts, on standing: *specific gravity* of the entire fluid, 1009.16 at 56° Fahr.; *specific gravity* of the clear fluid, 1009.40 at 53° Fahr.; or if the temperature be taken into account, about 1009.0; *reaction*, slightly alkaline, but well marked; *odour* peculiar, slightly fæculent.

Heated with a small quantity of *nitric acid*, the fluid acquired a pink tint, and a precipitate fell; a peculiar odour was developed;[1] there was no effervescence. Strong nitric acid destroyed the pink tint. The alcoholic extract gave the tint with nitric acid; showing, in this way also, that it could not be dependent on uric acid. On drying the watery extract, however, and exposing it to the vapour of ammonia, a pink colour again became evident, most probably from the formation of murexide. No urea could be detected. With *hydrochloric acid*, the purple tint, from the presence of a protein compound, was produced. *Acetic acid* gave a slight precipitate. There was none of the organic principle of the bile.

Composition.—Water	985·35
Solids	14·65
	1000·00
Albumen	2·40
Other undetermined matters, including principle coloured by nitric acid, trace of uric acid, etc.	1·27
Salts, phosphates, and chlorides,—the latter in excess	10·98
	14·65

Dr. Garrod remarks, that "the ash has nearly the same composition as that of the serum of the blood, the chlorides being greater in amount than the phosphates."

Observation 2.—*Stool passed by a man aged about* 50, *thirteen hours after the commencement of the attack, and six before death. Algide symptoms intense.*—The stool separated, on standing, into two parts. The supernatant fluid was perfectly watery and limpid, passing readily through fine filtering paper. *Reaction*, markedly alkaline; *odour*, peculiar, and faint,—perhaps slightly fæculent; *specific gravity*, 1009.5, at 49° Fahr.

The liquid became hazy by heat, and the peculiar odour was rendered more intense. A drop of *nitric acid* increased the turbidity; a few more drops considerably increased it, and produced a very faint, but decided violet, tint; a further addition of acid destroyed this colour, and gave a light yellow tinge. A tolerably copious precipitate fell. When acidulated with *acetic acid*, the yellow prussiate of potash, and the bichloride of mercury, both gave precipitates. The ash of the fluid was perfectly white; it effervesced with nitric acid; the solution of the salts was strongly alkaline. There was no urea, nor uric acid, in the fluid.

[1] Dr. Garrod compared this odour to that of butyric acid.

Composition.—Water		989
Solids		10
		1000
Coagulable organic matter,—probably albumen		1·18
Incoagulable organic matter, and a little phosphate of lime		0·56
Soluble Salts, viz.: Chlorides of sodium and potassium	5·188	
——— Phosphate of soda	1·052	
Other soluble salts, of which sulphate and carbonate of soda formed a part	2·883	
		9·14
		10·87

Observation 3.—*Last stool passed by a woman, aged* 28, *in the algide stage, six hours before death; cramps had been severe, but nearly ceased.*—The whole stool was only ʒx in quantity. It separated into two parts: the fluid part was perfectly clear and watery. It was filtered through fine paper. *Reaction*, alkaline; *odour*, peculiar, but not at all faeculent; the *specific gravity* was not taken.

Boiling produced no change of colour. A drop of *nitric acid* produced a little decided effervescence; but no violet tint. A few more drops gave a flocculent precipitate; but there was no change of colour. A very peculiar odour was given off; and a gas was evidently disengaged as it was now difficult to boil the liquid, on account of its occasioning violent ebullition. The odour was certainly different from that of the *nitric acid*, with which it was at the time compared. It was less pungent and had more of a burnt odour. By adding nitric acid in excess and boiling for some time, the odour disappeared, and the precipitate was completely separated itself. There was no uric acid. The ash of the fluid effervesced with nitric acid.

Composition.—Water		990·[illegible]
Solids		9·[illegible]
		1000·[illegible]
Organic matter (of which a large portion was albumen) and insoluble salts	2·186	
Soluble salts, viz.: Chlorides, phosphates, and sulphates	7·520	
	9·706	

Observation 4.—*One of the last stools passed by a middle-aged man in the deep algide stage, who subsequently died.* It had the usual pale appearance, and was alkaline.

Dr. Garrod was kind enough to examine it very carefully for urea and uric acid, but could not detect the presence of either. The other compound which gives the red or violet tint with heat, and nitric acid was also absent. The stool contained, as usual, salts, and coagulable organic matter, but the quantities of these were not determined.

Observation 5.—*Either the* 6*th or* 7*th stool passed by a woman, aged* 23. *There were severe cramps at the time. The algide symptoms well marked, but the patient ultimately recovered.*—The stool consisted of two parts, as usual. The fluid was thin, watery, and colourless, but not perfectly transparent. It was not filtered, but drawn off with a pipette.

Reaction, strongly alkaline; *odour*, peculiar, and very slightly faeculent; *specific gravity*, 1008.3, at 66° Fah.

With *heat*, a slight haziness occurred. A very small quantity of *nitric acid* added to the hot fluid, gave a very beautiful violet tint, which boiling for several minutes did not destroy. The addition of more nitric acid at once destroyed it, and the liquid assumed a slightly yellow tinge; a flocculent precipitate fell. The peculiar odour was given out as usual. The ash, but not the fluid, effervesced with nitric acid.

Composition.—Water		989·17
Solids		10·83
		1000·00
Coagulable organic matter	0·27	
Incoagulable organic matter and insoluble salts	2·23	
Soluble Salts, viz.: Chloride of sodium	4·013	
—— —— —— —— potassium	0·791	
—— —— —— phosphate of soda	0·326	
—— —— —— sulphate of soda	0·487	
Other soluble salts	2·713	
	8·33	
	10·83	

Observation 6. *A stool passed by a girl, aged* 11, *who had been much purged, and had vomited, and had had severe cramps. At the time she passed this stool, the pulse was imperceptible, or nearly so; the eyes were sunken, the surface was very cold, but there was comparatively little cyanotic tinge of the skin, and respiration was easy; six hours afterwards, reaction commenced, and she recovered.*

The fluid was thin, colourless, and slightly opaque; it was filtered through coarse paper.

Reaction, faintly alkaline; *odour*, peculiar, not at all feculent; *specific gravity*, 1005.8 at 65° Fah. By heat the fluid became hazy. It was not treated with nitric acid. The ash effervesced with nitric acid.

Composition.—Water		991·053
Solids		8·947
		1000·000
Organic matter, of which an undetermined quantity was albumen	3·12	
Soluble Salts, viz.: Chlorides, phosphates, sulphates, carbonates	5·827	
	8·947	

Observation 7. *The last stool passed by a boy, aged* 10, *seven hours before death. There had been from eight to twelve previous stools during the illness. The algide symptoms were intense, but there were no cramps at any time.*[1]—The stool measured ʒxij—it was like gruel; there was a very incomplete separation of the flaky substance from the fluid, until gentle heat was applied, when the flaky substance fell, and left a perfectly clear and limpid supernatant fluid. It was deemed advisable to estimate the solids without separating the suspended solid matter.

Reaction, alkaline; *specific gravity*, 1010.27, at 52° Fah. The fluid would not pass through the coarsest filtering paper, and very slowly through muslin.

Nitric acid and heat produced a yellowish or fawn colour, there was no red tint; the peculiar odour, rather sharper than usual, was given

[1] Cramps are often absent in children; but in boys of this age they are generally present.

out. When the flaky substance was separated, the thin fluid ga flocculent precipitate with nitric acid. The residue had a brov colour. The phosphate of lime was in unusual quantity, and may been derived from the unseparated flaky substance which caused quantity of organic matter to appear large.

Composition.—Water		982·0
Solids		17·3
		1000·0
Organic matter, a portion of which was albumen	8·962	
Soluble Salts: Chlorides, phosphates, sulphates	7·258	
Phosphate of lime	1·100	
	17·320	

Observation 8. A stool passed by a boy, aged ten, who had pres all the algide symptoms in moderate intensity. Reaction was just mencing, and in a few hours afterwards, consecutive fever was established.[1]

The stool did not separate readily into two portions; when it di the supernatant fluid was subalbid, and turbid. The liquid was stra. *Reaction*, alkaline; *odour*, peculiar, not at all fæculent; *specific vity*, 1014, at 56° Fah.

The fluid, when heated, gave out a peculiar odour. *Nitric aci* small quantity, produced a yellowish tint, and a more peculiar and racteristic odour was evolved, but not so well marked as in some o stools. An excess of nitric acid was added, and the liquid was boiling for six hours, when a distinct, but very small, precipitate which was in too small a quantity to weigh.

Composition.—Water		972·8
Solids		27·1
		1000·0
Organic matter, of which only a small portion was albumen, and insol. salts	20·81	
Soluble Salts, viz.: Chlorides of sodium and potassium	2·938	
——— Phosphate of soda	1·8	
——— Sulphate of soda	·3951	
Other soluble salts, including carbonates	1·2069	
	6·34	
	27·18	

Observation 9. A well marked case in a woman, aged 27; the symp were, however, mild, though very characteristic; she ultimately recov First stool during the period of reaction which had a fæculent smell the time it was passed, the woman still presented many of the a symptoms, though the pulse was stronger, and the surface and b were regaining warmth.

The stool was of a yellowish-white, or subalbid colour, and separ into two portions on standing; the upper portion was whitish-ye

[1] This patient did not pass urine for fifty-three hours; he then passed about ten ou clear yellow urine; after standing for twenty four hours, there was no sediment. Th cific gravity was 1.016, at a temperature of 56°. By heat and nitric acid the fluid ac a light red tinge, and about one third of its bulk of albumen was thrown down. Evap to one-sixth, and treated with nitric acid, it exhibited, after twenty four hours, no nitr urea. It was not tested with Pettenkofer's test for choleic acid.

thick, and turbid; the sediment was greenish-yellow, granular and dense, and with a decided faeculent smell.[1]

Fluid filtered through coarse paper. *Reaction*, faintly alkaline: *specific gravity*, 1008.91, Temp. 55° Fah.

When boiled for ten minutes, the colour changed, and became of a light red, or fawn tint—the liquid continued alkaline—a peculiar odour was given out, which was not faeculent—there was no ammonia evolved. A few drops of nitric acid added to the hot liquid, gave a dark red, or brown colour; a copious precipitate fell, and the usual odour was given out. After boiling for an hour and a half, the red colour was unchanged. An excess of nitric acid, however, at once destroyed the colour, and the liquid became of a light yellow tint. It appeared as if a portion of the precipitate was re-dissolved. The ash effervesced with nitric acid; the solution of the salts was strongly alkaline.

Hydrochloric acid, boiled with the liquid, gave a slight, but very distinct purple tinge, and a precipitate fell; a great excess of acid neither destroyed the colour, nor re-dissolved the precipitate. Sulphuric acid gave a reddish tint, and a flocculent precipitate. Uric acid was not tested for; but after some days keeping, the fluid had acquired a smell very much like stale urine.

Composition.—Water		983·38
Solids		16·62
		1000·00
Coagulable organic matter not redissolved by excess of nitric acid	1·48	
Incoagulable organic matters	6·055	
Soluble and insoluble salts, the former consisting of chlorides, phosphates, sulphates, and carbonates	9·085	
	16·62	

Observation 10. *A boy, aged* 15, *attacked with Cholera. Subsequent reaction and febrile symptoms; then recurrence of rice water purging. The stool was taken at this time. Ultimate recovery.*

The stool separated into two parts by rest. The fluid part was watery, but turbid, and of a very light brown colour; it had no faeculent smell. The sediment was greyish-white, and was divided into two strata; the upper whiter, more flocculent, and less granular, than the lower. The fluid portion was filtered through coarse paper.

Reaction, markedly alkaline; *specific gravity*, 1017.83, at 45° Fah.

Heated with *nitric acid*, it effervesced slightly; a red tinge appeared, which became very much deeper after a few minutes boiling. An ex-

[1] This woman passed urine, for the first time, thirteen hours after the fair commencement of reaction. It was about five ounces in quantity, faintly acid, and of a yellow colour. Specific gravity, 1.018. It was highly albuminous, and threw down, with heat and nitric acid, a copious precipitate, which occupied nearly one-half of the bulk of the fluid. At the same time a very deep red colour was struck by the acid, exceedingly like the colour given by nitric acid to the stool in typhoid fever, only not quite so dark. A portion evaporated to an eighth of its bulk, and nitric acid added, gave no crystals of nitrate of urea after thirty-six hours standing.

A white flocculent precipitate subsided from this urine after a few hours standing. As I had not time to examine this, my friend, Mr. Clover, examined it, and found the following objects:—

1. Scaly and columnar epithelium.
2. Corpuscles like mucous or exudation corpuscles.
3. Vibriones.
4. Pus corpuscles?

There were no crystalline objects.

cess of nitric acid being added, and the boiling continued, the co was partially, but not entirely destroyed. A tolerably copious p pitate fell. Uric acid was not detected.

Composition.—Water	981·79
Solids	18·21
	1000·00
Organic matter coagulated by heat and nitric acid, albumen (?: ·855	
Incoagulable organic matter and salts . . . 17·355	
18·210	

Owing to an accident, the soluble salts were lost after they had b dissolved out from the incinerated mass, and were being evaporate be weighed. They appeared to be in their usual quantity, and assum this to be 8 parts in 1000, it leaves 9.355 for the incoagulable org matter.

Observation 11.—*A middle-aged man, after rallying from the stage of well-marked Cholera, continued to suffer from diarrhœa. Se days after reaction, he had a return of what was considered rice w purging. He ultimately recovered.*

The fluid separated into two portions; the sediment was white flocculent.

Reaction, faintly alkaline; smell peculiar, not at all fæculent; th was not sufficient fluid to take the specific gravity. Heat and ni acid gave no violet, or red colour, nor at first was there any prec tate; but after some time, a small flocculent precipitate appeared. peculiar odour of cholera stools was given out.

Composition.—Water	991·53
Solids	8·47
	1000·00
Incoagulable and coagulable organic matter (the latter in small quantity) and insoluble salts . . . . 4·589	
Soluble salts 3.881	
8·470	

Observation 12.—*Fluid taken from the small intestines after dea* After filtration, it was distinctly alkaline; it coagulated by heat alo and also by heat and nitric acid, which produced no red colour. contained chlorides and phosphates in abundance. After some da crystals of triple phosphate formed in it.

Observation 13.—My friend, Mr. J. E. D. Rodgers, has been ki enough to furnish me with the following account of his examination a specimen of *intestinal fluid taken after death.*

The fluid was alkaline before evaporation, but after this process yielded a strongly acid solution.[1] After incineration, the ash yield a strongly alkaline solution, which contained carbonates. "Analy indicated an immense quantity of alkaline chlorides, alkaline and eart phosphates, and albumen."

In addition to the analyses given above, I have examined seve other cases, and have always found, that the thin fluid was alkali

[1] Mr. Rodgers suspected this acid to be the butyric, but was not quite certain on t point.

and contained an abundance of alkaline chlorides, phosphates, and sulphates, and a certain proportion of albumen. In one or two cases, there has been a trace of iron, possibly from the presence of blood particles, which form an occasional, but very infrequent, constituent of the Cholera stools.

These observations correspond with those of O'Shaughnessy,[1] Vogel, Wittstock,[2] Buchanan,[3] and many others, made during the epidemic of 1832. I shall now proceed to draw such inferences as may safely be done from so small a number of cases.

1. There is no doubt that it is incorrect to speak of the Cholera fluid as the serum of the blood; the fluid is derived from the serum, but is not composed of all its ingredients; it consists of its water, and of its salts, with a very small proportion of its organic elements. If other organic elements of the serum are poured out, they do not remain fluid. The ash effervesces like the ash of the serum, with nitric acid.

2. The Cholera fluid, in its purest form, consists of little else than water, salts, and coagulable organic matter, which is probably albumen. The incoagulable organic matter, or extractive, which is probably an excretion from the intestinal mucous membrane, is reduced to its lowest proportion, (in one case, only .55 in 1000 parts), and possibly, in some cases, may be altogether absent.

3. This soluble incoagulable organic matter, or extractive, which exists in great quantity in healthy faeces, soon disappears from the cholera fluid. It appears to be restored when reaction commences. It raises the specific gravity of the fluid and the proportion of the solids in 1000 parts.

The following observation proves its existence in the mildest form of Cholera, or what may be called, as the algide symptoms were not present, choleroid diarrhœa:[4]—

Observation 14.—*Stool from a middle-aged woman, who had had serous diarrhœa for two or three days. Vomiting then came on; twelve hours after its commencement, she had cramps in the extremities.* The stool was passed a few hours after the commencement of cramps; at this time there was languor, and the pulse was weak; but there were no other signs of collapse; the skin was warm, and the eyes were not sunken; she speedily recovered. Cholera was ravaging the neighbourhood; and a daughter of this woman was at the time labouring under its developed form.

The stool separated, as usual, into a fluid and sediment.

The fluid was slightly brownish in tint, and semitransparent; the sediment was brownish and flocculent.

Reaction, distinctly but not strongly alkaline. *Odour* peculiar, not at all faeculent. There was not enough to take the specific gravity.

No effect was produced by heat. A small quantity of nitric acid did

[1] Report on the Chemical Pathology of the Malignant Cholera. Highley, London. 1832.

[2] Simon's Chemistry by Dr. Day, vol. ii, p. 382, and Hoefle, Chemie und Mikroscop am Krankenbette. Erlangen, 1848, pp. 87-8.

[3] Observations on the Malignant Cholera, 1832, p. 11.

[4] In another less advanced case of premonitory diarrhœa, the extractive was 2·846, the albumen ·466, the phosphate of lime ·548, and the soluble salts as much as 9·04, in the 1000 parts. The sediment was white and flocculent; and was found, under the microscope, to consist entirely of undigested food, chiefly vegetables.

not produce any red or violet tinge; an excess gave a slight ye tinge, and a precipitate, which had previously formed, separated i completely. An odour similar to that from other cholera stools at the same time evolved. The solution of the salts was stro alkaline.

Composition.—Water	986·9
Solids	13·1
	1000·0
Coagulable organic matter, albumen . . .	0·29
Incoagulable organic matter and insoluble salts . .	6·82
Soluble salts, viz.: Chlorides, Phosphates, Sulphates .	5·99
	13·10

The following tabular view, from which the seventh Observatio excluded, will show more conspicuously the relation of the extrac matter, as well as of the albumen and salts, to the cholera fluid:—

Period of disease in which the stool was passed.	Specific gravity.	Albumen in 1000 parts.	Extractive in 1000 parts.	Sol. salts in 1000 parts.	Tot soli 1000
Diarrhœal period . .	1012·0	0·466	3·816	9·04	13
Diarrhœal period . .	—	0·29	6·82	5·99	13
Early algide stage . .	1009	2·4	1·27	10·98	14
Developed & intense algide stage	1009·5	1·18	0·55	9·14	10
Developed & intense algide stage	—	2·186		7·52	9
Developed and moderate ditto	1008·3	0·27	2·23	8·33	10
Developed and moderate ditto	1005·8	3·2		5·827	8
Commencement of reaction .	1014·0	20·84		6·34	27
Commencement of reaction .	1008·91	1·48	6·055	9·085	16
Relapse	1017·83	0·855	17·355		18
Relapse	—	not weighable	4·589	3·881	8

4. Although the extractive is thus affected by the intensity of disease, it does not appear that the salts and albumen are equally The analyses are too few to allow me to speak with certainty; bu seems probable that, both in the premonitory period, and in the s immediately following the algide period, when the pulse is again and warmth is returning to the surface, the proportion of effused and perhaps of the albumen, may be as great in any particular sto in the depth of the algide stage. The number of stools, of co differs in the respective periods.

5. The albumen and the salts do not seem to bear a very cons proportion to each other; but the salts hardly ever seem to be th out, without carrying with them a portion of albumen, however sm

[1] In the liquid stools of typhoid fever (by which term I mean the disease describ Louis), the quantity of albumen in solution, is, as in Cholera, very small; and is never unless soluble salts, similar to those of the blood-serum, are also present. In one case 0·63, while the soluble salts were 7·24, in 1000 parts. In a second case it was 0·457, an salts were 5·164, in 1000 parts. It would even appear as if some portion of the albu the serum were so much more intimately combined with the salts than the remaining mass, that it is alone effused when the salts are poured out.

The greatest amount of the albumen is very trifling; and I have never seen any other case in which, from the bulk of the precipitate, I was led to infer that it very greatly exceeded in amount the quantity stated in the above analyses.

6. Boehm remarks,[1] that the discharges probably do not all come from the mucous membrane; but that some of the fluid may be derived from the immense quantity of water drank by the patient. This may be the case sometimes, but there is no indication of such a dilution in the above analyses; the proportion between the salts and the water is tolerably well preserved, and renders it likely that these constituents were both derived from the same source.

7. As in the deep algide stage the excretion of the extractive is arrested, so also, in great measure, is that of the earthy phosphates, which are thrown out so largely by the healthy intestinal surface. In some cases there has hardly been a trace of the phosphate of lime; in others this has existed in diminished quantity. In no case has it nearly equalled the healthy standard, or approached to the excessive increase which occurs in the stools of typhoid fever. In the cholera stools, the crystals of triple phosphate, although sometimes seen, are infrequent.

8. Nitric acid does not, as Simon supposed, produce any change of colour in the true cholera fluid. When the violet tint does occur, the stool has generally a faculent smell. The colour is clearly not owing to uric acid, for it is destroyed by an excess of nitric acid, though not, in my experiments, by boiling. Moreover, as Dr. Garrod pointed out, it must be owing to an organic substance soluble in alcohol. It is then either to be attributed to the presence of bile, or to some substance excreted by the intestinal mucous membrane. There is no evidence of bile beyond this colour, and as there is a remarkable retention of this product in cholera, as in dysentery, I am disposed to think the last supposition the most probable one. The same organic matter, if I may speak from the similarity of the remarkable tint produced by the acid, was passing off by the urine in one of the cases of reaction. As uric acid appears to be usually excreted in very small quantity in the first urine passed after cholera,[2] the colour was probably not attributable to it, and it was indeed dissimilar in shade.[3]

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[1] Die Kranke Darmschleimhaut in der Asiatischen Cholera, etc., von Dr Ludwig Boehm. Berlin, 1838, p. 15.

[2] Dr. Letheby has lately made two analyses of urine passed during reaction, in which the proportion both of urea and uric acid is low, while that of extractive (kreatine, kreatinine, and other organic matters) is very high.—(*Medical Gazette* for December.)

[3] The same colour, only of a very much deeper shade, is given by the fluid part of the stools in the "fièvre typhoide," and I have also seen it several times in the urine of persons labouring under obscure affections of the digestive organs, not connected, as far as I could make out, with the liver. It is important to remember, as bearing on the question of the nature of fever consecutive to Cholera, that urea and uric acid and kreatine are not the only excretions which may be retained in the blood; it is very possible that the peculiar organic compounds, usually excreted by the intestinal mucous membrane, may be also retained, in consequence of the deep injury this membrane has undergone. In other diseases, I have been led to infer, although it is exceedingly difficult to prove the supposition, that the interruption to the secreting function of the intestinal mucous membrane produces serious disorders in other organs, which may be connected with it in function, or may be called upon to supply the deficiency. I have formerly argued that certain diseases of the liver, of the pan-

9. Although the inference of Wittstock, drawn from the colour g by nitric acid, that the cholera fluid contained uric acid, is erron because the colour cannot be always obtained, and when obtained, not be owing to uric acid, it appears, from Dr. Garrod's first anal that a trace of this acid may exist, as it does in healthy serum; Garrod, in his second analysis, could not detect any, and I have fully looked for it without success.

10. In many cases, Pettenköfer's test for the organic principl bile has been used, but no trace of this substance has been found.

II. MICROSCOPIC EXAMINATION OF THE SEDIMENT IN THE STOOLS, SO-CALLED "CHOLERA MASSES."

Many stools receive the name of "rice-water", which have no c to this appellation. The sediment in the true rice-water stool is fectly white, in flocks or little shreds, and is exceedingly light. S times, the entire stool seems not to have a greater specific gravity the fluid separated from the sediment. This lightness may be i trated by the following fact:—The whole flocculent substance fr stool which measured more than a pint in quantity, and which was washed and dried, in order that it might be submitted to ultimate lysis, weighed only four grains.

The most accurate microscopic examination of the cholera ma are those made by Boehm in 1832, and described and figured in work to which I have already referred. His descriptions, however, a almost entirely to the fluid contained in the intestines after death, he does not seem to have bestowed equal attention on the sediment the stools. As the proper comprehension of Boehm's admirable searches is essential to the discussion on this subject, I shall, as bri as clearness will permit, detail his opinions.

In the first chapter, Boehm describes minutely the changes in epithelium of the intestinal mucous membrane in Cholera. In second chapter, he describes the microscopic character of the cho masses. After saying that, in all languages of Asia and Europe, epithets flocculent, creamy, like groats-broth, like rice-water, etc., h been applied to the intestinal fluid, he goes on to say that the var products, however different to the naked eye, described under t terms, may be all referred to changes in the epithelial coat. The fluid, however, he decides to be undoubtedly a secretion from the bl which is poured in large quantity through the diseased intestinal m brane. The varieties of the intestinal contents depend on the var proportions of this secretion and the cast-off epithelial particles, an changes in the latter. He then enumerates the several varieties. fluid was like *milk* when the quantity of secretion was great, and epithelial particles were all separated from each other; it was *puru* or *creamy* when the epithelium, separated into its finest elements, scantily diluted with the secretion; it was *flocculent* when, with a

creas, and less frequently of the kidneys, follow large and irreparable destruction of mucous membrane of the colon in tropical dysentery. Some affection of these orga not uncommon after mild attacks of Cholera; it may be, possibly, from a similar cause.

fuse secretion, the epithelial particles were not separated, but cohered together, and under the microscope presented flat lamellæ if they came from the smooth mucous coat, or crooked cylinder-like masses, or tubes, domes, or glove-like cases, according as, more or less perfectly cohering, they were shed from the apices, bases, or entire surfaces of the villi, or from the interior of the follicles; it was like *rice-water* when the flocculi, in smaller quantity, swam in a slightly turbid secretion; it was like *oatmeal-broth*, when the larger epithelium masses were of various colours, white or greyish green, mixed intimately with each other, assuming, from the scanty secretion mixed with them, a pulpy consistence. When the cholera masses were adherent, this was owing to the partial separation of large patches of epithelium, the further mixing of which with the general contents of the intestine was prevented by death. Boehm then goes on to describe the *mucous* intestinal contents (which, he says, are rare as long as Cholera is acute), the *bilious* contents seen at the end of the slighter cases, and the *bloody* contents seen in some of the severest cases. With these last observations I shall not concern myself at present. Boehm makes one very important observation, viz., that while in the severest cases of Cholera epithelial particles, in immense quantities and with the sharpest outlines, are found on the iliac side of the ilio-colic valve, on the other side of the valve their number at once diminishes in an extraordinary manner, and sometimes they are not seen at all. He accounts for this by supposing that the epithelial coat of the small intestine is soluble in the fluid poured into the large intestine. He says also, that he yet seldomer found pyramidal epithelium particles in the discharges, although there was a quantity of flocculi, which, at the end of the chapter, he describes as composed of semitransparent long strings of an elastic consistence, so that, after being pressed between plates of glass, they recovered their form. These flocks often enclosed little crystals of a rhomboidal form, which, as they also occurred in the cholera fluid, seemed to imply that these elastic shreds might arise from coagulation of some material, which perhaps, he says, owed its origin to solution of epithelial fragments.[1]

In some respects, it would be difficult to describe more accurately the contents of the intestines after death; in no other disease are such beautiful specimens of epithelium seen, and their several conditions cannot be better described than they are in Boehm's work. But the account of the flocks of the stools is meagre and unsatisfactory; and Boehm appears to me to have even overlooked some elements in the intestinal contents.[2]

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[1] Op. cit. pp. 10 to 35.

[2] I have not been fortunate enough to meet with any detailed observations made during the present epidemic in St. Petersburg or in Berlin, on the intestinal discharges. From some very interesting debates, however, in the *Gesellschaft für wissenschaftliche Medicin* of Berlin, reported in *Die Medicinische Reform* for September, October, and November, it is apparent that Boehm's opinion of the extreme importance of the casting off of the epithelium is considered erroneous. This is not only maintained by Virchow and the partisans of the opinion which regards Cholera as a general blood disease, but also by Leubuscher and others, who consider all symptoms as sequences of the disease of the intestinal mucous membrane, and who, it might have been supposed, would have attached much importance to changes in the epithelial coat. Thus Leubuscher says that he cannot consider, with Boehm, the essence of Cholera to be repro-

Before proceeding to this point, I shall subjoin a few microscopic obse vations on the stools. I was anxious to have these made by indepe dent observers, so that no hypothesis of my own might be supposed have biassed me. The names of the gentlemen who so kindly complie with my request, is an ample guarantee for the extreme accuracy of th observations. The numbers refer to the corresponding analyses of th fluid of the same stool.

Observation 1. *Early algide stage.*—Examined by Dr. Jenner, wit a power of 400 diameters.

"1. Some closely aggregated amorphous, very fine granular matte rendered somewhat more transparent by acetic acid.

"2. Numerous minute granules, the largest transparent and yello surrounded by a dark border, the smallest dark and opaque; acetic ac rendered some of the granules more transparent; liquor potassæ di solved a few, and rendered others more transparent; boiled in eth for seven minutes, they appeared undiminished in number and una tered in appearance.

"3. Organic corpuscles, similar to those described subsequently (O servation 6, No. 3), but much fewer in number, and generally smalle many of them imperfectly formed, the capsule enveloping them bein indistinct, so that they looked like a simple aggregation of black an yellow granules.

"4. A few semitransparent, peculiarly smooth granules, unaffecte by cold liquor potassæ or acetic acid.

"5. No epithelium particles, no pus globules, nor blood corpuscle either red or white."

Observation 2.—*Developed and intense algide stage.* Examined Professor Ellis.

"The white, flaky substance, suspended in the rice-water stool, co sists of a clear transparent basis, which contains a granular materi and cells.

"*Granules.*—The granular material is seen on the surface of th mass, and is collected here and there into patches of uncertain size an irregular form; the molecules composing it are very minute.

"*Cells.*—The cells are strewed thickly through the mass; an speaking generally, they may be said to be rather larger than the whi corpuscles of the blood. In many parts they seem to be arranged i lines, but this appearance may be due to only a certain number comin into focus at the same time.

"*Form of cells.*—Some of the cells are roundish in form, thoug none are circular; and many (perhaps an equal number) are oval elongated. The lengthened cells are about the size of the others i their short diameter.

"*Contents of cells.*—Both sets of cells have finely granular content and a dark defined circle round them.

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sented by this throwing off of epithelium; this is only a secondary process; "die Abst sung ist immer nur ein secondärer Prozess."—(Op. cit. Nov. 3, p. 124.)

It may not be uninteresting to mention that, in these debates, are many important deta of the "diphtheritic inflammations" of various organs, which occur in the consecutive fever

"*Size.*—The statement respecting size must not be taken too literally, for many cells are larger than the size stated, and many are smaller.

"*Action of acetic acid*, equal parts of acid and water. Acetic acid causes the mass to shrink and become more transparent. The cells become very indistinct, being in some cases scarcely recognizable, even where the material is thin. But where the mass is thick, the granular material comes more distinctly into view. Of course the fibriform appearance is lost; the acid seems to gelatinize the mass.

"*Nature.* The material resembles exudation mass more than any other substance."

Observation 3.—*Developed and intense algide stage.* Examined by Professor Sharpey.

"1. No characteristic epithelium particles to be seen.

"2. Slimy flakes, containing, scattered about, irregular-shaped particles, and small molecules.

"3. A few white finely-granular corpuscles; some round, others of a more or less irregular shape; in size a little smaller than the pale corpuscles of the blood."

There may have been other matters; but Dr. Sharpey had time to make only a cursory examination.

Observation 4.—*Developed and intense algide stage.* Examined by Mr. Hillman; Mr. Quekett, of the College of Surgeons, was kind enough to confirm the observation, and to make sketches of the objects, which I possess.

"1. Squamous epithelial particles; none of the columnar form.

"2. Nucleated and granular bodies, resembling exudation corpuscles.

"3. A small number of blood corpuscles.

"4. Irregularly-shaped flattened cells, with single large central nuclei; rather larger in size than the exudation corpuscle.

"5. Membranous shreds, resembling basement membrane."

Observation 5.—*Developed and moderate algide stage.* Examined by Mr. Clover. Unfortunately it could not be examined till four or five days after it was passed. There was a quantity of granular matter, and scaly and columnar epithelium.

Observation 6.—*Developed and moderate algide stage.* Examined by Dr. Jenner.

"1. Colourless, semitransparent, amorphous, membranous flakes; dissolved or rendered transparent by acetic acid or liquor potassæ. Boiling ether has no effect upon them (albumen?)."

"2. Semitransparent fibres, lying in close apposition; perhaps united by No. 1, or may be only the same matter arranged in strie. They were seen most distinctly at the parts of the field in which the tissue had accumulated in the thickest masses. Liquor potassæ dissolved them, or rendered them very transparent (fibrine?).

"3. Organic corpuscles; round, oval, irregularly oval, or pointed at one end, and rounded at the other; more or less spherical, finely-granular on the surface, and containing, in their interior, minute granules, varying in number from six or eight, to sufficient to fill the entire corpuscle.

Some of these contained granules were mere black points; others w transparent and yellow, with dark margins. In size, the round puscles varied from 1-4000 to 4-5000 of an inch in diameter. oval corpuscles were about 1-4000 in breadth and 4-5000 in leng They had both a faintly-yellow tint. Boiled in ether for seven minut they were unchanged.

"4. Granules similar to those described in observation 1, No. 2.

"5. One large granular body, semiopaque and yellow; 1-1000 of inch in diameter; unaffected by acetic acid.

"6. Vibriones in great numbers. Two or three oval transpar bodies placed end to end. When the stool was kept, these fungi creased in numbers."

Observation 7.—*Intense algide stage. No cramps throughout illn* Examined by myself. Power of microscope, 400 diameters.

1. Amorphous finely-granular matter.
2. A few molecules.
3. No epithelium or blood corpuscles.

In this case the flaky matter did not separate from the thin fluid gentle heat was applied; it then formed a confused sediment, which h not the usual flocculent appearance. Mr. Bowman saw this stool, a confirmed the above observation.

Observation 8.—*Commencement of reaction.* Examined by myse Power of microscope, 400 diameters.

1. A large quantity of transparent gelatinous matter, complet dissolved by acetic acid.
2. In the meshes of this matter, many dark or yellowish granul unaffected, or nearly so, by acetic acid.
3. In some few cases, these granules were aggregated together, a formed little masses; whether then surrounded by a cell-wall could n be determined.
4. One or two large cells, containing two or three central granules
5. No epithelium. After a long examination, one or two particl were seen, which looked like debris.

Observation 9.—*Commencement of reaction.* Examined by myse immediately after it was passed.

There were a few epithelial scales, and granular and molecular ma ter, but hardly any of the peculiar corpuscles formerly described.

Observation 10.—*Relapse.* Examined by Mr. Quekett and M Hillman.

"1. Small masses of biliary resin.

"2. Granular matter, similar to that seen in mucous corpuscles, a such as is obtainable by squeezing the follicles of the intestinal canal

"3. Portion of muscular tissue (adventitious).

"4. No epithelium—no exudation corpuscles—no blood."

Observation 11.—*Relapse.* Examined by myself.

To the naked eye, the sediment appeared partly finely-granular a partly flocculent,—not at all unlike some true Cholera masses. consisted entirely of shreds of striped muscular fibre (adventitious), particles, apparently of undigested food, and of molecular matter. dark yellow granules were seen; neither was there any appearance epithelium, nor of blood.

Observation 12.—*Fluid from intestine.* Examined by myself.

1. Epithelium particles very numerous.

2. Organic corpuscles, about the same size as the pale corpuscles of the blood, finely granular on the surface, and containing from six to twelve dark yellow or black granules. Acetic acid caused no appearance of nuclei.

3. A few red blood corpuscles, very much altered and irregular in outline.

4. A few cells, like immature epithelial particles, small and irregular.

5. Granules of the same size as those described in No. 2, but free.

After several days' keeping, the fluid was again examined, when the same elements were seen, with the addition of a few crystals of triple phosphate.

Observation 13.—*Fluid from Intestine.* Examined by Mr. Rodgers. An immense quantity of epithelium was seen. A dried specimen exhibited a large quantity of crystals of alkaline chlorides, a few crystals of phosphate of ammonia and magnesia, and a little phosphate of lime.

Observation 14.—*Choleroid diarrhœa.* Examined by Mr. Clover and myself.

Epithelial scales, granular matter, and shreds of vegetable fibre and cells derived from food, were observed.

In addition to the above examinations, I have made some others, which agree completely with them, but which, to avoid repetition, I shall not here insert.

These observations, made by independent observers, have a remarkable uniformity among themselves, but differ completely from Boehm's descriptions. In the true Cholera masses, there are the fibres to which he alludes; but there exist also corpuscles, peculiar granules, and an amorphous flaky matter, which he has not noticed in the stools, nor in the contents taken from the small intestine after death. In both these situations, these elements exist in abundance, though mixed, in the intestine, with an immense quantity of epithelium, which may possibly, in some cases, obscure them, or cause them to be overlooked.

I do not think any one who had ever seen these corpuscles, could for a moment suppose them to be any modification of broken down epithelium, or to be immature and imperfectly-formed epithelial nuclei. They are different in size, and in all their physical appearances; and, moreover, it must be remembered, that cylinder epithelium is confessedly scarcely ever seen in the cholera stools; and that if it were so seen, and could by any change or breaking down form either the corpuscles or the granules, we ought to be able to find all grades and phases of the change. Neither can it be considered probable that the epithelium of the small intestines is soluble in the fluid of the large, and that then, by deposition, it forms these corpuscles, or the fibres which Boehm describes. In the fluid of the small intestines, the epithelial particles often preserve their sharp and definite outline for days, although they occasionally do seem to break up. It is by no means probable that the fluid effused into the cæcum, which is doubtless of the same nature as that from the whole canal, can possess any such solvent power.

If not epithelium, can these be mucous corpuscles and granules

thrown off, as it were, by an intense *catarrh* of the mucous coat?[1] In reply to this, it may be argued: 1, that these bodies are much smaller than the large corpuscles with the central granules, seen in mucus; the granules are of a different kind, are differently arranged in the interior of the cell, and are differently acted on by acetic acid. 2. It is not likely that mucus would be secreted in such enormous quantity, while the usual excreting functions of the mucous membrane are evidently totally abolished. 3. If these corpuscles are mucous, why should they not appear through the whole course of the disease, instead of being confined to the deep algide period? They are not seen in the premonitory diarrhœa, nor after the algide stage; and disappear when the pulse and the warmth of the surface are returning. Now, it seems unlikely, that if they are formed by an intense irritation of the mucous coat, they should so rapidly disappear. I do not wish, however, positively to contend that these corpuscles are not mucous, since I have not compared them, as I hope soon to do, with the intestinal mucous corpuscles in other diseases.

But whatever be the nature of these corpuscles, it seems to me impossible to consider the fibres and gelatinous-looking flakes, mucus. If they are so considered, everything which appears on the surface of a mucous membrane may be called mucus, without any regard to the nature of the action which has been exerted upon the transuding blood fluid, by the textures through which it passes. These fibres and flakes, in all respects, chemical and microscopical, resemble those seen in the so-called inflammatory exudation matter, and it is in the highest degree probable that they owe their origin to effused blood-plasma, which assumes with great rapidity a low, ill-defined, and non-progressive organization. This opinion is rendered still more probable by the fact, that other elements of the blood are effused in the cholera fluid, and that the plasma itself is certainly poured into the solitary and Peyerian glands, (distending their capsules to a great extent,) and perhaps into the entire mucous membrane.

Boehm alludes very briefly to the possibility of this occurrence. He writes:—

"In previous observations, carried on to determine the nature of the flocculent substance, that opinion was most likely, which considered that together with the serous element of the blood, the so-named albuminous, or plastic material, transuded in a dissolved form into the intestinal canal, and then separated in the form of flocculi. In this case, however, the flocculi would naturally exhibit no organized structure and arrangement."[2]

Boehm certainly appears to have been a little biassed by his observations on the great desquamation of epithelium, when he did proceed to *prove* that this unorganized plastic matter was not present an observation it was certainly incumbent upon him to make.

With regard even to the separation of the epithelium, although the facility with which this structure is shed, even during certain ordinary healthy processes, it does appear probable *a priori*, that it would

[1] This would probably be the opinion of Andral, who has already (*Gazette* No. 33, 1847) called this substance "modified mucus."

[2] Op. Cit., p. 19. From the size of Boehm's plates, it appears probable that his was not of sufficient power to enable him to see the corpuscles.

largely thrown off in Cholera, there is absolutely no proof that it is so thrown off, until after the death of the patient. The stools contain none, or a quantity not more considerable than is present in common diarrhœa, if even so much.[1] If the epithelium is separated, during life, what could prevent its passing off? It cannot surely be separated and yet retained. Is it then so broken up that it cannot be recognized? This is impossible. Boehm himself accounts for this difficulty, by assuming that the epithelium is dissolved in the fluid of the large intestine; but this is, in the first place, unlikely; and secondly, is not indicated by analysis. Besides, if during the whole course of Cholera, epithelium is thrown off, how is it that we find it after death in such great abundance?[2] Is it not most likely that the epithelium does not really separate in any quantity during life; but that after death, being continually immersed in the fluid which fills the intestines, and being possibly, in some measure, rudely shaken by the previous rapid transit of the Cholera fluid, it may separate itself more or less completely from the basement membrane, and divide itself more or less minutely into its smallest elements, according to the length of time after death, the violence used in opening the intestine, and other obvious circumstances?[3] It is quite certain that the several varieties of the stools, such as milky, chalky, &c., are given, not by epithelium, but by very small granules. In the milky stools, there is often a complete "molecular base."

It appears to me the most simple, and the most likely view to consider all the flocculent matter of the true Cholera stool, cells, dark yellow granules, fibres, flakes, and amorphous matter, to be but modifications of the same substance, viz., fibrine. The granules appear to form, by aggregation, little masses, round which a cell wall forms in the way which, as pointed out by Henle, occurs in certain inflammatory exudations, or perhaps cells may form from the liquid plasma, as in the low organization taking place in the follicular deposit of typhoid fever.

Whether this be the case or not, it may be considered probable that the microscopic forms now referred to, co-exist in their greatest perfection with the purest type of the Cholera fluid.[4] They are effused while the disease is at its acme. Immediately after the algide stage, in the first stool of reaction, they become indistinct, and finally disappear; the effusion of fibrine into the intestinal canal appears to have stopped; the sediment of the stools consists now only of amorphous matter, a few perhaps of the peculiar granules, and a little epithelium. It may be mistaken, however, if judged only by the eye, for a true Cholera mass, although it does not contain the characteristic elements.

[1] It is probable, however, that in the period of reaction especially, there is a great tendency to desquamation, and that one form of consecutive fever is complicated with this.

[2] In order to account for the great quantity of flocculent matter found after death, and the small quantity passed in the stool, I formerly, believing the matter to be of the same kind in both, suggested that the thinner portions only might pass off; but this explanation is unnecessary, if the opinions advanced above are correct.

[3] The epithelium of the gall bladder, in other diseases besides Cholera, separates in this way after death, particularly where the bile is watery.

[4] I must state, however, that I have met with two or three stools, passed during the cold stage, in which the flocculent matter appeared granular and amorphous. But these were all mild cases, and there were foreign matters in the stool which obscured the view, and I may mention that in these cases it was singular that there was very little lividity of the skin.

Then gradually the quantity of Cholera fluid lessens, and finally, pigment appears, and the stools lose altogether the Choleraic chara

Want of space compels me to dismiss these most important to with this indication merely of the chief points of interest. I hop a future occasion, to be able to adduce additional facts in corrobora or modification of my views, and to enter more fully into the ques of the relation of the individual elements of the Cholera dejection the general phenomena of the disease.

CONTRIBUTIONS TO THE PATHOLOGY AND TREATME OF TROPICAL FEVERS.

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(*Continued from p. 50.*)

III. REMITTENT FEVER.

The tendency of intermittents, when unchecked, to pass into re tents, and of the latter to change again to the intermittent form, di the transition from the hot to the cold season, shows the inti relation of these varieties of fever. In 1821, the rainy season at B was unusually light, the weather consequently hot, producing ar the men of the Horse Artillery a great amount of hepatic disease comparatively few cases of remittent fever. The latter, however prevalent in H.M. 17th Dragoons, who were located leeward of fe marshy ground that lies south of the cantonment towards Cam while the site of the latter was lower and more favourable to mala emanations, than was the locality of the Horse Artillery Barrack. a slight elevation and comparative dryness of soil produced only i mittents and attacks of hepatic disease; there a lower level and da situation, abounding with pools of water, which dried up as the we got hot, gave origin to remittents.

The Kaira district of Gujerat, in which the dragoon cantonm were situated, is a flat, sandy country, where the land is well culti and fertile, producing abundance of rice, wheat, and other grains. soil is a mixture of sand and vegetable mould, the substratum of v is a granular carbonate of lime, here and there elevated into hill or sloping in gentle declivities towards the beds of the rivulets, v have a slow, almost stagnant, course towards the sea. The natu the soil, and flatness of the land, admit of the country being flooded during the rainy season, which begins in the middle of and continues till the end of September. While the rain is act falling, intermittents and dysenteries are the prevailing compla but towards the termination of the season, when vegetable decom tion begins to take place, and the vapour which arises from situations during the day is seen at evening to hang over them i form of a white haze, remittent fevers of a violent nature be general. From the middle of September to the middle of Nove when the climate is humid, hot, and oppressive, these fevers rage great severity, and in various forms, according to the peculiar spheric condition of particular seasons, and prove very fatal to rece arrived Europeans.

In the beginning of June, 1822, the 4th Dragoons, from Europe, relieved the 17th Dragoons at Kaira. The former regiment, about 600 strong, was, in a great measure, composed of healthy young men from the labouring class, very few of whom were under eighteen years of age, or beyond the period of middle life. Soon after their arrival at the station, the rainy season commenced, with squalls of wind from the S.W. The rain was continuous and fell heavily during August, when the maximum of the thermometer fell from 94° to 90° of Fahrenheit. About the 20th of September the monsoon ceased, the days were hot and sultry, and generally a heavy dew fell at night. The first part of October was also sultry and oppressive, though there were occasional showers. Towards the end of this month the wind changed from S.W. to S.E., and there were thick morning fogs on the ground, which never dispersed before the sun had attained a considerable height. While the rains were falling, the prevailing diseases, in the 4th Dragoons, were bowel complaints and intermittent fever; and among the men of the Horse Artillery, rheumatism and fevers of a mild type. Among both bodies of men, however, severe remittents were generally prevalent in the end of September, and proved very fatal to those of the dragoons: this regiment having lost, from the beginning of June to the end of December, three officers, fifty-one men, seven women, and twenty-seven infants and children, chiefly from fever and bowel complaints. In the same period the horse-artillery lost six men, of whom five died from remittent fever, and the other from chronic hepatitis. In the end of November the cold weather set in, and the intermittents admitted into hospital from this time were attended by better marked symptoms of hepatic affection, and a less violent hot stage, than had characterized fevers of the same type in October. On the 2nd of December the horse artillery marched from Kaira *en route* to Poona, passing through a country where *sooraih* and other strong spirituous liquors were easily and cheaply procured. Many of the men were consequently often intoxicated, and were exposed to the influence of causes that usually produce fevers of periodicity, viz., jungle or thick brushwood, and long rank grass, existing in the district between the rivers *Nerbudda* and *Tapti*. Extreme variations of temperature between the heat and cold of the days and nights, which happened at this time, gave great energy and effect to the malarious causes originating from these sources, and which, in this instance, appear to have acted rather as predisposing than as exciting ones, in giving rise to fevers of great severity. The variations were sometimes so great as 30° of Fahrenheit, the thermometer standing at 85° during the day, and descending so low as 54° at night. The two troops of horse-artillery from Kaira joined, on the 2nd January, 1823, the relieving bodies on their march from Seroor, and both divisions halted at the station of Bahlipara, in the neighbourhood of the Portuguese settlement of Damaun. Here all the troops were encamped for several days, leeward of an extensive tank and marsh, over which a north-east wind was constantly blowing; and before many days a severe bilious remittent fever, attended by symptoms of congestion, broke out among the men from Kaira, and proved fatal to three of the nineteen attacked. The influence of the morbific predisposing causes, *viz.*, exci-

tion and former febrile attacks, was developed in the productio severe fever among those from Kaira; while the more robust healthy subjects from the Dekhan, not exposed to like causes, tinued free from fever during the whole period of our encampment.

The conversion of *intermittents* into remittents follows, as we shewn, increase of temperature and augmented malarious influe being dependent, as would appear, on increased nervous irritabi chiefly affecting the cerebro-spinal and grand sympathetic circl nerves, as will be presently illustrated in the pathology of these fe The modifications of them which I have observed in different par India, may be described as four varieties: 1*st*, Simple or uncomplic remittent; 2*nd*, Inflammatory or complicated; 3*rd*, Asthenic or gestive; and 4*th*, The typhoid. The first is the most common for remittent met with in Bombay; the two next are those usually affe young, healthy European subjects in Gujerat, or soon after their ar within the tropics; and the last may be either the effect of *over t ment*, particularly *profuse bloodletting*, and the too *free use of purgat* or the primary effect of weak constitutional powers, and the concentr application of endemic causes, and cold. The assemblage of sympt characterizing these diversities of tropical remittent, is useful for tical purposes, and the phenomena distinguishing each may be desc as succinctly as possible.

Simple Remittent.—In this the febrile symptoms crept slowl the patient at first complaining of extreme lassitude without any quate cause, slight headache and pain of the limbs, loss of app and occasional uneasiness at the epigastrium. The features were and shrunk, the eyes dull, heavy, and listless, with occasional running along the spine. The tongue was either covered with a white film, or yellow and loaded, but generally moist. The b were, for the most part, constipated, and the pulse small and freq This period of nervous depression was succeeded by symptoms o action: the pulse and skin increased in volume and temperature headache became more severe, with occasional delirium, accompani nausea at the stomach and vomiting of bilious matter. The tongue now dry and furred, the thirst great, the urine high-coloured and sc and the patient complained of a painful sense of weariness, causi constant desire for change of posture. In most cases these symp had a well-marked diurnal exacerbation and remission, almost am ing, in the slighter forms, to intermission; and after a period, va from three to six days, were partially relieved by a general warm spiration appearing on the skin, indicating that, though the secre from the liver, kidneys, and intestinal mucous surface, were imp and deranged, there was still no actual inflammation of these or which seemed to be only functionally affected. The increased or nished temperature of the skin, and the greater or smaller volu the pulse, mark well the remittent character of the fever, and sh be carefully observed both during the day and at night, particular midnight is found in many instances to be the time of the exacerba

This species of mild, uncomplicated, remittent fever, is that us met with among the *sipahies* of our native regiments, and in Euro constitutions, where the sanguineous temperament is not strongl

veloped, and where there are no indications of high nervous mobility. It is not, therefore, associated with a phlogistic state of the blood, or marked inflammatory action in any of the organs, unless allowed to proceed uninterruptedly, or without efficient treatment, till the third, or sometimes the sixth day: at which periods the disease, from having, as appeared, the tertian type, showed a disposition to natural crisis and relief of all the symptoms. But when the perspiration, which broke out at these periods, proved imperfectly critical, there was generally, about the sixth day, a tendency in the disease to terminate in partial collapse, with congestion of some important organ,—the liver, spleen, or brain. This state was followed by a stage of reaction, to which succeeded well-marked inflammatory affection of some of these parts, converting this originally mild variety of remittent into the more severe inflammatory species; which, when proceeding from high health, phlogosis of the blood, and much derangement of the secretions, may be an original disease.

Inflammatory Remittent.—In this all the symptoms characterizing the mild form were increased in degree, and were present in the cases admitted into hospital during the extreme heat that took place in the end of September and beginning of October. The patients described the chilliness as running along the spine in distinct shocks; to which succeeded excruciating headache, flushed swollen countenance, hot dry skin, much irritability of stomach, great thirst, severe aching pains in the loins and lower extremities, and a very frequent, bounding, but compressible pulse. These symptoms, for the most part, suffered a remission at night, or towards morning; but the ascension of the sun, and the extreme heat after noon, brought with them an exacerbation. In some instances, the remission seemed more remarkable and distinct on the morning of the odd, than of the even day, arising, probably, from the original type of the fever being tertian; but in others, the symptoms were nearly continued, and not marked by any very distinct remission. The salivary secretion was very defective and viscid; the tongue either covered by a white slimy crust, or furred and parched. In the latter case, the thirst was most distressing—amounting, indeed, to agony—in the height of the exacerbation; so that patients even derived relief from exposing the tongue to the air. The biliary and cutaneous secretions were defective; and the urine sometimes so acrimonious as to create strangury. The temperature of the surface, measured by a thermometer, was 105°. Some of the patients had a fixed pain at the vertex of the head, and tenderness of the scalp. One also had tenderness along the course of the spinal canal; so that pressure on the cervical vertebræ immediately produced an inclination to vomit. Extreme giddiness was a bad symptom; and was connected, as appeared, with much venous congestion of the brain. The severity of pain in the extremities seemed proportionate to the cerebral affection. One patient had delirium; and the sleep of all was much disturbed. There was great oppression at the chest and epigastrium; and the respirations were short and quick. The pulse, at the height of exacerbation, was generally 140°; and did not fall lower than 118° during the remission. Its strength varied throughout the day, and rose in proportion to the heat of the atmosphere. In the morning, when the

air was coolest, it was small and frequent; but at three o'clock in t
afternoon, during the greatest heat, it was full but compressible. T
biliary function was deranged from the commencement of the disea
though there was seldom pain in the region of the liver, until the fe
had been of several days' duration. There was frequently deficie
of bile in the alvine evacuations; though sometimes its presence in
stomach, and in too great quantity, created nausea and oppressi
The alvine evacuations were sometimes as black as tar; but var
from this to a leaden brown and dark yellow colour. Many of
patients, previous to the development of the febrile symptoms, had b
passing large quantities of mucus by stool; and, under such circu
stances, the prognosis was unfavourable, as the whole intestinal muc
surface seemed to be in a state of morbid vascularity.

Congestive, or Asthenic Remittent.—is distinguished by gr
languor and drowsiness, mental depression, and pain in the he
attended by a sense of constriction, as if a band compressed the br
There was much anxiety and oppression of the præcordia, general de
tive condition of the secretory functions, accompanied by an oppress
feeble pulse, and cold, moist, clammy skin. These symptoms w
seldom preceded by attacks of chilliness or shivering, as in the
former varieties; but were attended by continued sense of cold
tendency to collapse, as in cases of cholera, and without any well-mar
general reaction; there being, in this stage, partial flushings of
face, heat of hands, or greatly increased temperature at the epigastri
and over the abdomen. The eyes were sunk, and injected with blo
and the tongue clammy and moist. The phenomena of this vari
have been correctly attributed to suspended function of the cere
spinal and great sympathetic nerves, attended by depressed actio
the vascular system, and follow the intense sedative influence of
malarious poison. In some instances, however, met with at vari
times, the symptoms seemed to be connected with long-standing dise
of the liver, kidneys, and central organ of circulation.

Typhoid Remittent.—When this form of the remittent appeared
an original disease, the symptoms continued for two or three d
without distinct remissions or exacerbations. There were much ten
and tenderness at the epigastrium; nausea, or vomiting; the skin
harshly dry and hot; the tongue parched and brown, or sometimes
red in the centre, and red at the edges; the alvine evacuations w
dark and offensive; drowsiness or muttering delirium, a feeble,
quent pulse, tremor of the hands, sordes of the lips and gums,
occasional subsultus tendinum, were present. In other cases, where
symptoms were the effect of too free blood-letting, or the injudici
use of purgatives, the stage of vascular excitement, observable in
two first varieties, gave way to indications of extreme nervous dep
sion and general atony of the vascular system. The patient's heada
was succeeded by drowsiness and starting of the tendons, in some ca
and by restlessness and febrile anxiety in others. The respirat
became quicker and shorter; the temperature of the skin fell below
natural standard; the countenance grew pale and haggard; the tu
albuginea of the eye became of a yellowish hue, or there was gen
bilious suffusion of the skin; the tongue became black and dry;

teeth covered with sordes; and the gums sphacelated, where calomel had been administered too freely, with the view of obtaining its constitutional effect. Mr. Mardon, formerly of the Bombay Medical Board, and now residing in London, has described, in *Johnson's Medical Magazine*, a fatal fever of this kind, which prevailed, during the month of June 1818, in a detachment of the Bombay European regiment, doing duty in the garrison of Surat. The detachment consisted of ninety-four men, who occupied a damp, ill-ventilated building, formerly used as a mint; and, being much crowded together, fifty-three out of the whole were attacked by severe fever. The leading symptoms of this were great prostration of strength and irritability of stomach, acute headache, pallid lips and tongue; transparent, horny-looking gums; generally sunk and cadaverous expression of the countenance, though in some it was much flushed. The pulse was frequently hard and strong. Some of those attacked were brought to the hospital in a state of stupor, from which they did not recover for several hours. Calomel was at first used, in order to obtain its constitutional effects; but the head soon became swollen, the parotids enlarged and indurated, accompanied by sphacelation of the gums, and other symptoms of putridity. The treatment was successfully changed to moderate blood-letting, sponging of the body with cold water and vinegar, and saline effervescing draughts, to relieve thirst and reduce the heat of skin, followed by the free use of bark combined with diluted sulphuric or nitric acid.

Post-mortem Appearances.—A minute examination of the bodies of those who died of remittent fever in Gujerat, was made in every instance; and though the morbid appearances varied somewhat in different cases, they were in general such as to identify similarity of action having existed in all varieties of fever. They were in no respect different from what I afterwards met with in the remittent fevers of Bombay and other parts of India, excepting that, in Gujerat remittent, there were indications of the cerebro-spinal axis and great nervous centres being in a better marked state of *hyperæmia* than they were observed to be in other instances. Most of the fatal cases at Bombay occurring in men of more advanced life, the intestines were more frequently softened or ulcerated, the liver enlarged and pale from former disease, the spleen pulpy, the lungs adhering to the parietes of the chest, with the accompaniment of fibrinous polypi in the heart. It will be impossible, within the small compass allowed in the *Journal*, to give the detail of particular cases. I must content myself, therefore, with giving as specific and correct an analysis of the appearances as the subject will admit of.

Brain and Spinal Column.—The immediate cause of death seemed to be effusion of serum betwixt the pia mater and tunica arachnoides, or into the lateral ventricles. If the patient died early, venous congestion of the substance of the brain was strongly marked, by the cut surface of the medulla becoming instantly covered with numerous bloody points, and by the pia mater being of a livid colour. But when the patient died emaciated, the bloody points were fewer, and the vessels of the pia mater contained large quantities of air. Where delirium had existed, the pia mater was inflamed through the whole substance of the brain. The theca vertebralis always contained more or less fluid, and

in one instance its cellular sheath was very vascular, and had a gelā nous appearance throughout. In this case a considerable quantity albuminous fluid had been effused betwixt the tunica arachnoides a the pia mater of the medulla spinalis, immediately opposite the seven dorsal vertebrum. The white substance of the medulla oblongata a me lulla spinalis, and the ganglia of the great sympathetic, were in highly vascular state.

Chest.—The lungs were only fully collapsed in one instance, and this there was no appearance of pulmonary disease. In all other cas there was general congestion of the lungs, or pulmonary apoplexy their substance, the ecchymosed tumours being harder than the rest their structure, appearing, on a section being made of them, to be form by the extravasation of frothy blood into the part. In one instan there were yellow crude tubercles in the lungs, and here the pleu costalis contained eight ounces of bloody serum. From half an our to six drachms of yellow serum were generally found in the pericardiu

Abdomen.—The liver, which had in many cases suffered from p vious chronic disease, was in a state of congestion, attended with ext vasation into the hepatic parenchyma. The gall bladder was fil with thick black bile. The mucous coat of the stomach was very r and vascular near the pyloric orifice, sometimes softened and mamm lated, and in one case, where the mouth sphacelated from mercury, was of a dark leaden colour. Occasionally where the stomach was v cular, the mucous coat of the duodenum, which contained an ash-colou slime, was normal; but the mucous lining of the jejunum and ile was, in recent cases, red and vascular, and in those of some wee standing of a dark grey colour. The spleen was soft and pulpy. many instances the mesenteric glands were enlarged, and the pancr more indurated than natural. The kidneys, when examined, were i state of hyperæmia.

Pathology of Remittent Fever.—Intermittents so far differ fr remittents that the nervous irritation and increased action of the cir lating system are of only temporary duration, and terminate by increase of the secretions, functionally suspended; while the latt either associated with a more phlogistic state of the blood, more ac irritation and hyperæmia of the cerebro-spinal axis, and great nerv centres, are seldom disposed to a crisis, or return of natural actio after the exacerbations, unless assisted by the interference of art. Th were certainly occasional cases of remittent, under the influence change of air, and removal from the site of the *miasma* causing the which terminated by a remarkable increase of biliary secretion, con tuting what is called *hepatic erethism*; but in general the *vis a te* and the natural power of the constitution were not sufficient, as intermittents, to overcome the resistance offered by the capillaries of skin, and the congestion of other secretory organs; and when no lon capable of doing so, simple remittents assumed an inflammatory continued form. The phenomena attending remittent fevers in Gu rat, and in other parts of India, indicated compound affection of nervous, circulating, and secretory systems; the first of which, in r comers, seemed to be *primarily* affected by the sedative action *malaria* on the blood; but, in cases of relapse, and in the constituti

of long residents, rendered extremely sensitive of sol-lunar influence, altered and diseased secretion of some of the chylopoietic viscera were first observable in the chain of morbid effects; and to this succeeded the nervous depression, and subsequent irritability of the sensorium and nerves, which became manifest. The same reflex action of abdominal irritation, caused by improper food, or the presence of worms, in cases of infantile remittent fever, is seen to produce, *secondarily*, such an increase of carbon in the blood, and accumulation of blood in the venous system and right side of the heart, as often take place in *idiopathic* cases of remittent fever, wherein such morbid effects are considered *primary*. The arrangement of fevers into *idiopathic* and *symptomatic* is therefore of questionable propriety, as would be the forms of cholera, which are, under general epidemic influence, *primary*, but often *secondary* when arising from improper food, or the abuse of intoxicating liquors, favoured by the action of *endemic causes*, preventing the complete arterialization of blood in the lungs, and increasing the quantity of excrementitious matter in the circulating fluid.

Those who have witnessed pernicious remittent fevers, like those of Gujerat, must have remarked that when the bile was deficient or changed in quality, the appetite languid, and the tongue loaded, there were symptoms of muscular debility, pallor, and coldness of the feet and skin, and increase of the intestinal mucus; that the nutrition of the body was imperfectly performed, the qualities of the fluids consequently changed, accompanied by constitutional irritability, followed by increased temperature of the skin and volume of the pulse. They must have also become sensible how absolutely necessary to good health are the depurating functions of the liver and intestinal surface, assisted by those of the kidneys, skin, and pulmonary respiration; and can scarcely wonder that in fever, where all these functions are suspended, the best directed efforts of the physician should frequently prove unsuccessful for the cure of so formidable a malady, as is the marsh remittent of warm climates. I will endeavour to analyze and describe these successive changes as they occurred in fever, knowing how necessary it is, for the object of successful treatment, to attentively watch and consider them during the progress of the malady, and in all its modifications.

Though unacquainted with the exact nature of the poisonous exhalation, or *malaria*, causing intermittents and remittents, we are yet capable of tracing its effects on the human constitution. These vary in grade according to the greater or less intensity of the cause applied, and the predisposition of individuals affected; giving rise to every type and modification of fever. The only visible morbid changes produced by such cause are to be traced in the vascular system of the several organs, with whose functions in a healthy state, and with the laws that regulate them, we become acquainted through the discoveries of physiology. Combining such knowledge with the *post-mortem appearances* in Gujerat remittent, and in other diseases, such as cholera, having an *algide* stage, I ascribe the whole series of febrile phenomena to loss of vitality in the blood, consequent accumulation of it in the right side of the heart and venous system, hyperæmia with defective action in the brain and spinal marrow, and temporarily suspended secretory functions of the liver, intestinal surface, kidneys, and skin. These, with the

suspension of the respiratory functions, and necessary chemical change of the blood that produce animal heat, give rise to the cold stages both of fever and of cholera. The subsequent reaction and excitement accompanying the hot stages of intermittents, and the exacerbations of remittents, and also the febrile stage of cholera, are clearly referrible to an increased flow of blood through the spinal marrow and dependent nerves, which are in a state of hyperæmia with increased motion, and give rise to those copious secretions of bile and diarrhœal discharges from the intestines, by which nature, in healthy constitutions, endeavours to relieve herself, and to restore the blood to a healthy purity. The pathological condition, then, of simple and inflammatory remittents, must be considered as *hyperæmia* and *active irritation* of the spinal marrow and nervous centres, which supply the great abdominal organs of secretion. When these organs are in a healthy state, and capable of relieving themselves from the increased determination of blood to them in febrile action, by supporting an increase of their secretions, remittent fevers are met with in their mildest form, and are curable by the gentlest appliances of art. But when, (through intensity of malaria, previous disease, original weakness of constitution, or too great pressure or oppression of the circulating fluid in its vessels,) becoming incapable of carrying on their ordinary functions, they are left in a state of asthenic hyperæmia or congestion, and sometimes of secondary inflammation, with diminution of the red particles of the blood, there are respectively constituted the congestive and typhoid modifications of remittent. These, as far as I have been able to discover, are the phenomena or series of changes which take place in primary or idiopathic fever.

In relapsed cases of the remittent, however, where no fresh application of malarious causes could be deemed instrumental in producing disease, morbid excitement appeared to commence with derangement of the digestive organs, and irritation of the intestinal mucous membrane; which irritation, extending through the great sympathetic to the cerebro-spinal axis, probably produces the same change on the blood and secretions, as those associated with the phenomena of idiopathic fever. It is only in this manner that the periodicity of infantile remittent fever, when not of primary malarious origin, can be accounted for. In constitutions rendered irritable by long residence within the tropics, the same reflex nervous irritation is produced by a change from a tropical to an extra-tropical climate, by the influence of cold on the skin, or the prevalence of east wind, without the aid of fresh malaria.

Treatment of Remittents.—It would be impossible for me to here enter on the mode of operation by which particular remedies equalize morbid excitability and diminish febrile action, and I must, therefore, limit myself to the general system of treatment which I have found most efficacious in remittent fever. The general principle kept in view, with the constitution in a state of sthenic plethora, was to reduce the quantity of blood in the vessels, and diminish nervous excitability by one or more general blood-lettings of twenty ounces from the arm, according to the fulness of the pulse, and tone of the constitution. Immediately after the bleeding, from ten to fifteen grains of calomel uncombined, were given along with a saline effervescing draught, com-

lined with a drachm of ipecacuanha wine and an equal quantity of nitrous ether. The head, being the part chiefly affected, was shaved, and the cold douche employed to reduce febrile heat during the exacerbations; or cloths, wetted with vinegar and cold water, were kept constantly applied to the head, the hands and arms also being sponged with the same cooling lotion. The administration of the calomel, when the stomach was free from irritability, was followed by a brisk purgative of compound senna mixture and Epsom salts, or compound powder of jalap, in order to remove the diseased secretions from the bowels. During the next exacerbation, if a second general bloodletting were required, it was repeated with caution; for in the country of Gujerat, where the thermometer, in the month of October and part of November, rose to 90° at three o'clock in the afternoon, the pulse of those suffering from remittent was found at this hour 130, and seemed to possess even firmness and strength in cases where the constitution had been worn down by former disease. At the period I first went to Gujerat, it was a common practice, in accordance with the doctrines of the day, to bleed largely in all cases of fever, under the erroneous supposition that fever and inflammation were much akin, and required the same amount of depletion. A very short experience in the remittents of the country convinced me of the danger arising from such a practice; and I soon learned that in so hot a climate I could not follow such a deceitful guide as the pulse, to direct me in deciding on a repetition of bleeding. The medical men of that day were too apt to form their ideas of treating fever from the vascular action accompanying its exacerbations, and to overlook the irritability of the sensorium and nervous system, which no amount of bleeding could diminish. In accordance with prevailing opinions, I was therefore induced, in the earlier years of my practice, to repeat the venesection two or three times; but became convinced, by subsequent experience, that more than two general bleedings were seldom necessary in inflammatory remittents disposed to assume a continued form. The coagulum of the blood, in the fevers of Gujerat, was for the most part very loose, and in large proportion to the serum; and as such a condition of it indicates no very great tolerance of the constitution for large abstractions of blood, and remittents of this kind were, after a few days' continuance, disposed to assume the typhoid character, it was better not to have recourse to repeated venesection. The local determinations, which become developed in the paroxysms, are more safely controlled by leeching or cupping, and by giving disulphate of quinine, in divided doses, along with small quantities of antimonial powder or ipecacuanha, and effervescing draughts with diuretics, to prevent the recurrence of the paroxysm, and obviate secondary inflammatory effects.

Mr. Marlén, in his treatment of the Surat remittent before alluded to, repeated the bleeding two, three, and four times, and says:—"In many, the first bleeding was sufficient to arrest the disease. Calomel was only used as a purgative before the administration of bark, which was administered with diluted sulphuric or nitric acid, before the exacerbations. Forty-eight men, out of fifty-three attacked, completely recovered by this treatment, after the practice of endeavouring to obtain the constitutional effects of calomel had proved most unsuccessful, and

was attended by extreme symptoms of putridity in the constitutions of the patients subjected to this mode of treatment." I would not, however, recommend, even in extreme cases, more than two general bleedings, knowing how easy it is, when quinine is properly administered in the remissions, to control the febrile heat and excitement of the exacerbations by cold douche to the head, and ablution of the body, where there is neither diarrhœa nor symptoms of inflammation in any of the abdominal viscera. The cold ablution of the body, during the height of the exacerbation, usually reduced the pulse twelve or fifteen beats for nearly an hour after its use, and if the heat of skin increased much and was persistent, it was necessary to repeat the remedy, and to keep the patient's head cool by wet applications. Every increase of irritation, every exacerbation of the remittent, appeared to commence in the brain, and extend along the spinal marrow, and were, in severe cases, subdued by the application of leeches to the temples. But douche to the head, and general cold ablution, are the remedies most to be relied on in moderating the exacerbations of Gujerat remittents, whose paroxysmal returns are to be prevented by quinine or the bark. In using cold ablution, it was not deemed necessary to delay it till the height of the exacerbation; for to this there are objections, of which not the least is that febrile heat is allowed to greatly increase, and to be reduced with less chance of a favourable termination.

In the mild remittent form which occasionally affected Europeans, and is that generally met with among the natives of India, an emetic of five grains of ipecacuanha, given at the commencement, was successful in breaking the chain of morbid phenomena; and when followed up, at bed-time, by small doses of mercury and chalk, a purgative the succeeding day, and then quinine to prevent the return of the paroxysm, seemed to be the best remedial measure for this kind of fever. Sometimes, in Europeans, a single general bleeding seemed necessary; but there were very few cases among natives of India wherever it was requisite. With the latter, mercurials should be sparingly employed; as the constitution and habits of our *Sipahies* are such as to render the free use of calomel dangerous to them. These men, when not on duty, expose themselves without clothing to the air, bathe daily in cold water, and cannot be strictly controlled in their diet. To such, the constitutional effect of mercury proves most prejudicial; and in regiments where the practice is resorted to, the annual invalid list is found increasing to a remarkable extent, the men becoming martyrs to rheumatism and glandular disease.

In the congestive form of the remittent it was usual to administer quinine combined with calomel, antimonial powder, and scammony, if the bowels were confined; or with small doses of opium when there was diarrhœa. The patients were put in a hot bath at the temperatur of 105°, and when laid again in bed, were allowed to drink freely equal parts of saline and camphor mixture, in doses of three ounc with the addition of half a drachm of nitrous ether. Partial con tions, marked by a great increase of heat in the forehead, or at the of the stomach, were relieved by cupping or leeching; and in s cases friction of the spine with stimulating embrocations, or the a cation of a large blister to the part, should never be neglected; as

the state of *hyperæmia*, with *defective innervation*, must be considered as the source of the symptoms attending this modification of fever. Stimulating enemata, composed of castor oil and oil of turpentine, may be also usefully employed in such cases. Whenever it may be deemed advisable to relieve the general distention of the vessels by bleeding, venesection should be performed while the patient is in the hot bath.

When the fever assumed the typhoid character, and there was increased temperature of the surface, the general principles of treatment were—tepid sponging of the skin; saline mixture, with diuretics, enemata, or gentle purgatives; and light nourishment, such as thin arrowroot, with small quantities of wine; or the yolk of an egg, mixed up sugar, nutmeg, wine, and hot water. As soon as the symptoms showed any tendency to remission, sulphate of quinine, with antimonials, saline mixture, and diuretics, were given to restore the healthy energy of the nervous and circulating systems; and to depurate the blood, by increasing the urinary secretion. In this modification of remittent, the chemical condition of the blood is altered, its red particles are deficient, and sometimes, from containing urea, it produces symptoms of oppression and coma. The employment of certain diuretics, therefore, at this stage of disease, forms an important element of treatment.

Infantile Remittent.—It is not my intention to enter at length on the consideration of this disease, which, in the form of gastric and bowel complaints, associated with febrile symptoms, proves so fatal to the infants and children belonging to newly-arrived European regiments. The relation of this disease to the tropical remittent of the adult, has been already pointed out; and the same morbid enlargement of the muciparous and mesenteric glands, congestion of the liver, softened and enlarged condition of the spleen, red vascularity of the mucous surface of the stomach and intestines, engorgement of the lungs, congestion of the brain and serous effusion into its ventricles, are observable after death in both. The remittent of infants, according to my own observations, either happened as a primary disease, caused by malaria; or occurred as a secondary one, proceeding from gastric irritation, induced by cold, damp weather, improper food, and teething. Like other fevers, I have found it terminating in mesenteric enlargement and marasmus, by which the child was reduced to extreme emaciation; or it occasionally ended in albuminous nephritis, with effusion into the abdomen, and anasarcous swelling of the legs.

The treatment of this disease must be conducted on the principle that it is more a disease of irritation than is the remittent of the adult; and the abstraction of blood to relieve local affections of the head or stomach, must be used more sparingly and with greater caution. The safest and most effectual management of this disease is to give repeated emetics of ipecacuanha wine, at the commencement of symptoms indicating the exacerbations, and to follow up these by administering small doses of mercury and chalk, with Dover's powder, or a saline draught containing ipecacuanha wine, after having previously used a warm bath at the temperature of 98° or 100° of Fahrenheit. If the abdominal pain appears great, a hot poultice or mustard cataplasm should be laid over the stomach, and diseased secretions from the bowels are to be removed by gentle doses of castor oil. The cerebral excitement and disposition

to drowsiness accompanying this disease are so frequently the effect of reflex nervous irritation from the abdomen, that the too free use of calomel or of purgatives must be avoided; for, when the Indian treatment of infantile remittent was to purge children with calomel till the greenish bilious motions became of a healthy yellow colour, I have seen patients thrown into a state of coma by the continued irritation kept up in the mucous membrane, and from which they soon recovered on this treatment being discontinued. Small doses of quinine, given with mercurials, are useful in preventing the recurrence of paroxysms in the child as well as in the adult.

IV. CONTINUED FEVER.

The ardent fever which prevails among recently-arrived Europeans, during the hot weather, is essentially a disease of the vascular and secreting systems, brought on by elevated temperature and excessive spirit-drinking, acting on the irritable fibre and excitable constitution of those in robust health. The changes effected in the blood by such causes, acting through the medium of the cerebro-spinal axis, are probably the same that take place in genuine remittent fever; but the continued ardent fever of the hot season must be held as a disease which originates quite independently of malarious causes, and is more nearly allied to gastritis and acute hepatitis than to the usual forms of pure remittent. Among bodies of men previously exposed, in marshy countries, to malaria, it may be met with assuming all the characters of continued inflammatory remittent; but in such cases it must be rather regarded as relapsed remittent, than a genuine continued ardent fever. It is, as before said, more exclusively connected with accelerated arterial action, and tonicity of the vascular system, than are other kinds of fever; though, under great exposure to the sun and excess in drinking, it is found occasionally in a congestive form.

The symptoms characterizing this type of fever, are—greater pain of the head and flushing of the countenance, more persistent heat of skin, firmer and harder pulse, tongue whiter or more furred, urgent thirst and higher coloured urine, accompanied by a red ferrety expression of the eyes, as in men bordering on attacks of delirium tremens. In the *sthenic* form of this particular fever, the headache is chiefly frontal, being attended with aversion to light, contracted pupil, and heat of the scalp, with flushing and heat of the neck and breast. But in the *asthenic* or congestive variety, which follows excessive drinking, and much exposure to the heat of the sun, the patients complain of vertigo, accompanied by dilatation of the pupil, a clammy and sometimes rather cold state of the skin, a low soft pulse, and other symptoms of depressed nervous energy. More severe attacks of this congestive type present the appearance of *coup de soleil*, the patients being in an insensible state, the face livid, the eyes suffused, the breathings stertorous, accompanied by hot skin, and an oppressed labouring pulse, which sinks rapidly if venesection is employed at the outset of the attack.

From the great similarity existing between continued tropical fever and the hepatic and cerebral affections of Europeans in hot climates, some have denied the existence of anything like continued fever within the tropics; but a few weeks' experience, during the hot season

Gujerat, and among lately arrived European troops, would soon convince them of the fallacy of such an opinion. This fever, like other similar affections, is met with, modified from a strong and well developed action of the vascular system, where general blood-letting can be borne well, to a congestive state of the blood-vessels, with depressed nervous energy, where bleeding, except by cupping, must be used with the greatest caution. In most cases of this disease, the stomach, after death, presents a highly vascular appearance of its mucous coat, accompanied by general congestion of the mesenteric veins; the liver is engorged with blood, the gall-bladder distended by green or amber-coloured bile, and the membranes and substance of the brain in a state of extreme congestion. In many cases, the liver and stomach seem to be the organs primarily affected, being followed in the course of the disease by cerebral symptoms; but the development of those presenting themselves in this fever varied considerably, according to the exciting causes to which patients had been exposed; cerebral ones being the more prominent where solar radiation had the lead in bringing on the attack, and hepatic or gastric ones, where excessive drinking had produced the fever.

The treatment must consist of general blood-letting, according to the circumstances and severity of the case; repeated cold affusion, to subdue the increased temperature of the skin; calomel, with antimonial powder and opium; active purgatives, with leeching and cupping of particular parts, where symptoms of inflammation or congestion appear. Quinine, with saline mixture and diuretics, become necessary after the more active symptoms are subdued; and in this type of fever, the constitutional action of mercury may be employed with more success than in cases of marsh remittent. The superior efficacy of this remedy, in the continued ardent fever, appears to depend on the blood being more fibrinous than in remittents.[1]

[1] Clinical cases in illustration, and much more relative to continued fever, are here necessarily omitted, the limits allotted to me having been already somewhat extended.

CASES OF REMITTENT FEVER TREATED IN THE EUROPEAN GENERAL HOSPITAL DURING THE YEAR 1839.

Months.	Names.	Age.	Diseases.	Times bled generally.	Number of ounces.	Times bled locally.	Number of ounces.	Other Remedies used.	No. of days in Hospital.	Days before admission.	Result.	Remarks.
Jan. 28	J. F.	8	Febris Remittens Infantilis.	0	0	1	2	Mercury and chalk, with Dover's powder, and the warm bath; quinine, combined with ipecacuanha and opium.	9	0	Cured	This patient had been frequently subject to fever and enlarged spleen, and his bowels were relaxed. The present attack arose from lunar influence, the moon being full on the 29th.
April 3	T. D.	31	Febris Remittens.	2	22	5	12	The warm bath, mercury, with ipecacuanha and extract of gentian, purgatives, and afterwards quinine mixture.	20	9	Cured	The symptoms, in this case, were gastric; the febrile symptoms not well developed, except from the severity of the headache.
April 10	A. T.	45	Febris Remittens.	0	0	1	3	Two blisters to the nape of the neck and head, calomel with James's powder and opium, the warm bath, purgatives, and diuretics; and ultimately, quinine, combined with a diuretic.	24	several	Cured	Previous to admission, this patient had been delirious, in consequence of which her head was shaved, and cold applied. The evening febrile exacerbation was feeble, and head symptoms continued for some time after her admission.
April 11	H. S.	39	Febris Remittens.	0	0	1	5	Cold lotion to the head, antimonial mixture, with diuretics and tincture of hyoscyamus, purgatives, sponging the body when hot, calomel, with quinine, ipecacuanha, and opium.	5	several	Died	Evening exacerbations, in this case, strong; much pain in the perinæum, accompanied by dysuria, and infiltration of urine into the cellular substance of the perinæum and penis, which sloughed. Previous to admission, the fever had been intermittent. After death, the liver was found enlarged, the spleen pulpy, the stomach natural, the mucous coat of the large intestines softened, and there were several small ulcers on the mucous coat of the urethra, by which the urine had escaped into the cellular substance of the penis. Substance of the brain somewhat more vascular than natural.
April 13	J. D.	33	Febris Remittens.	1	16	3	8	Calomel and purgatives, effervescing draughts to relieve nausea, leeches to	20	2	Cured	The leading symptoms, in this case, were gastric, accompanied by irritability of stomach, and

May 6	M. C.	19	Febris Remittens.	0	0	0	0	No treatment.			Died	This patient died soon after admission into hospital. Body was not examined.
May 7	T. H.	22	Febris Remittens.	0	0	2	8	Calomel and purgatives, warm bath, no quinine.	14	0	Cured	The symptoms, in this case, were gastric, and more inflammatory than febrile.
July 21	J. L.	31	Febris Remittens.	1	25	1	41	Quinine, with mercury and ipecacuanha, blisters and purgatives.	40	5	Cured	Was of a stout habit. Mouth became sore.
Aug. 10	J. T.	25	Febris Remittens.	1	16	4	10	Calomel, with James's powder and purgatives, and a blister to the right side; quinine subsequently given.	48	1	Cured	Was exposed to the sun and rain. Principal symptoms, hepatic; gums became tender.
Aug. 29	A. M.	16	Febris Remittens.	1	16	3	15	Mercury, with antimonial powder and purgatives, tartar emetic solution and diuretics, subsequently quinine mixture.	11	5	Cured	Leading symptoms, cerebral. A blister applied between the scapulæ.
Sept. 2	T. J.	17	Febris Remittens.	1	18	4	22	Diaphoretics, purgatives, quinine, mercury, and ipecacuanha.	22	6	Cured	Habit plethoric; chief local symptoms gastric.
Sept. 2	L. F.	30	Febris Remittens.	1	16	2	12	Calomel, with ipecacuanha and purgatives; a large blister between the scapulæ and at the epigastrium.		2	Died	A man of dissipated habits, who had a shivering fit on the second day of his admission; became comatose, and died. Had been only four months in the country; and previously suffered from gastro-enteritic symptoms. After death, the peritoneal covering of the liver was found opaque, and thickened, the lungs adhering posteriorly, and the heart hypertrophied and dilated.
Sept. 4	J. D.	50	Febris Remittens.	0	0	0	0	Calomel, with quinine and James's powder, blister to the epigastrium, effervescing draught, with diuretics, wine, and the warm bath.			Died	This was a person of colour, and a pauper, admitted in the last stage of the disease, with hiccup and typhoid symptoms. After death, the pulmonary and costal pleuræ were found adhering, with considerable serous effusion at the base of the skull, and fibrinous polypi in the auricles and ventricles of the heart.
Sept. 15	J. P.	21	Febris Remittens.	0	0	7	28	Leeches to the epigastrium and temples, a blister between the scapula and epigastrium, the warm bath, calomel, with quinine, ipecacuanha, wine, and purgatives.	41	2	Cured	A person of a florid complexion, and only seven months in the country; whose respiration was oppressed, pulse feeble, skin clammy, and hand numb.
Sept. 27	W. B.	34	Febris Remittens.	0	0	5	27	Calomel and purgatives, the warm bath; subsequently quinine, combined with diuretics.	10	4	Cured	Four years in the country, at Calcutta. Principal symptoms, cerebral and hepatic.
Sept. 30	W. S.	20	Febris Remittens	1	19	1	9	Calomel, with tartar emetic, and purgatives; during the remission, calomel, with quinine and ipecacuanha.	13	4	Cured	This was not a severe case.

CONTINUATION OF CASES OF REMITTENT FEVER.

Months.	Names.	Age.	Diseases.	Bled genly	No. of oz.	Bled locly.	No. of oz.	Other remedies used.	Days in Hos.	Days before admiss.	Results.	Remarks.
Oct. 4	J. O	36	Febris Remittens Nervosa.	0	0	2	10	Calomel, with quinine, ipecacuan, and opium, along with effervescing draughts, diuretics, and wine, cold douche to the head, and warm bath.	16	6	Cured	Twelve years in the country, and very dissipated in his habits. Had severe dysentery about two years ago; was convulsed at the new moon of the 7th, and much relieved by the cold douche to his head.
Oct. 7	T. J.	34	Febris Remittens Nervosa.	0	0	2	15	An emetic at admission, subsequently calomel, ipecacuanha, and opium, and purgatives, until the fifth day, when he was drowsy, and had convulsive twitchings; from which period, calomel, with quinine, antimonial powder, and opium, was given, along with cold douche to the head; warm bath and wine. Was repeatedly blistered on the right hypochondrium.	39	Not known	Cured	In this case the patient complained of uneasiness in the site of the right quadratus muscle; and there was a defined swelling, anteriorly, from the margin of the right ribs to the umbilicus, attended with hepatic sound. The pyrexial symptoms were, at first, intermittent, and increased in severity, being attended by much nervous trembling.
Oct. 11	T. S.	23	Febris Remittens.	1	20	5	29	Calomel, with quinine and purgatives; an emetic given at admission.	22	1	Cured	This man was of a stout make, ruddy complexion, and had just arrived from England. The symptoms were chiefly cerebral; and were most relieved by the cupping glasses applied at the nape of the neck.
Oct. 14	S. S.	18	Febris Remittens.		20	4	21	Calomel, with ipecacuanha and opium, purgatives, tartar-emetic solution, with diuretics, cold douche to the head, and subsequently quinine.			Cured	A person of fair, ruddy complexion, and just arrived from England. Leading symptoms gastric, but attended by much cerebral affection.
Oct. 19	W. C.	18	Febris Remittens.	0	0	4	8	Calomel, with antimonial powder and purgatives, warm bath, and subsequently quinine.	12	8	Cured	Symptoms commenced with ague, followed by hepatic affection.
[illegible]	R. B.	25	Febris Remittens [illegible]ngestiva.	2	36	5	29	Tartar-emetic solution, with diuretics; subsequently, calomel, quinine, ipecacuanha, and wine, a blister to the nape of the neck, and purgatives.	18	1	Cured	This was a man belonging to the 15th Hussar[illegible] lately arrived from England. He was of a fa[illegible] complexion and sanguineous temperament; w[illegible] was attacked on the 7th of October, at the peri[illegible] of the new moon, by hepatic erethism, or bili[illegible] cholera, for which he was bled to ℥xx.; used o[illegible] remedies, and was six days in hospital. In

											duced fainting. After reaction had taken place, the large intestines were affected with inflammation, and a bleeding to ℥xx. on the second day after his admission, was borne well, and produced immediate relief.
Oct. 22	T. R.	29	Febris Remittens.	1	20	3	20	Was cupped on the back of the neck, and had afterwards a blister applied; cold douche to the head, the warm-bath diuretics, mercurial purgatives, and an emetic; subsequently quinine mixture was given.	18	1	Cured	This was a case where cerebral congestion immediately succeeded the first attack, and was attended by loss of power in the right hand and forearm, much dilatation of the pupils, but fulness of the pulse. After the head affection was removed by leeching, cupping, one general bleeding, and a blister, a shivering fit and pyrexial symptoms succeeded, attended by bilious erethism. These were removed by an emetic, purgatives, and quinine.
Oct. 23	T.C.B.	18	Febris Remittens Congestiva.	0	0	1	0	A blister between the scapulæ and epigastrium, after the application of the leeches, cold douche to the head, and warm bath; calomel in small quantity, with quinine, antimonial powder, and diuretics, turpentine enemata, and hot foot bath, wine, and nourishment.	3	5	Died	This was a young gentleman of the Indian navy, who had been treated on board of ship previous to admission. During the night of the 17th he had a slight chill, followed by pyrexial symptoms; took an emetic and a saline purgative, afterwards took calomel three times daily, with antimonial powder, by which his gums became tender; was sick, and bled from the nose on the night of the 18th; had febrile exacerbations on the 20th, 21st, 22nd, and became delirious after the last: had been taking purgatives and diaphoretics during this time. Was exposed, previous to his illness, to the influence of the sun and wet.
Oct. 23	A. C.	30	Febris Remittens.	1	16	0	0	Mercurial purgatives, effervescing draughts, with nitrous æther; subsequently, sulphate of quinine.	0	3	Cured	This case was not severe, and was almost an intermittent.
Oct. 24	J. C.	43	Febris Remittens.	0	0	1	0	Calomel, with ipecacuan and opium, purgatives, and diaphoretics, until a remission took place; subsequently, quinine, combined with calomel and ipecacuan; blisters to the nape of the neck, diuretics, and purgatives.	37	1	Cured	The subject of this case was one of Her Majesty's 15th Hussars, recently arrived from Europe. The leading symptoms were gastric, accompanied by feeble circulation, cold, damp skin, and tendency to cerebral congestion.
Oct. 28	C. T.	24	Febris Remittens.	0	0	4	19	Calomel and purgatives, solution of tartar-emetic with effervescing draughts and nitrous æther, until a remission was produced; subsequently, quinine, and a blister to the epigastrium.	38	Not stated	Cured	This was a man of the 15th Hussars, recently from Europe. The symptoms were not severe, but gastric, and were much relieved by leeching of the epigastrium.

CONTINUATION OF CASES OF REMITTENT FEVER.

Months.	Names.	Age.	Diseases.	Bled genly	No. of oz.	Bled locly.	No. of oz.	Other remedies used.	Days in Hos.	Days before admiss.	Results.	Remarks.
Oct. 29	R. C.	20	Febris Remittens.	0	0	3	13	Calomel and purgatives, effervescing draughts, with nitrous æther; subsequently, quinine, with calomel and ipecacuanha.	14	Not stated	Cured	This was not a severe case, and the patient's gums became slightly tender.
Oct. 30	A. M.	32	Febris Remittens.	1	12	2	9	Calomel, ipecacuanha and opium, with purgatives; subsequently, sulphate of quinine.	15	Not stated	Cured	This patient had been only two months in the country, and had an attack of symptomatic fever on the 20th of September, was bled, purged, and took quinine; discharged the 9th of October.
Nov. 5	J.W.F.	18	Febris Remittens.	0	0	2	13	Calomel, ipecacuanha, and opium, with castor oil, the warm bath, and an emetic; subsequently, mercury and chalk, with Dover's powder and quinine, repeated blistering of abdomen, and anodyne enemata.	51	8	Cured	This was a case of remittent fever, where the constitution was weak and scrofulous, the pyrexial symptoms mild, and the evening exacerbations not strongly marked, as the diarrhœa and gastro-enteritic affection, which were severe, seemed to prevent their development. The patient had been eight days ill previous to admission. Mouth became sore.
Nov. 8	S. H.	5	Febris Remittens Infantilis.	0	0	0	0	Ipecacuanha, wine, emetic, warm bath, and castor oil.	2	several	Died	This was a case of neglected fever, terminating in diarrhœa. The child's extremities at admission were anasarcous.
Nov. 13	R. B.	25	Febris Remittens.	0	0	3	13	Warm bath, calomel, with quinine, ipecacuanha, and opium; purgatives.	13	0	Cured	This was a case of relapse, in which the leading symptoms were gastric and required leeching of the abdomen. Gums became tender.
Nov. 19	J. C.	42	Febris Remittens.	0	0	2	8	Cold douche to the head, calomel, quinine, and ipecacuanha, with purgatives, blister to the head and between the scapulæ, effervescing draughts, with diuretics.	35	5	Died	The patient had been long in the country, and when admitted at the period of the full moon in November, his manner was nervous, like that of a person who had been drinking, his pulse feeble, eyes suffused, bowels loose. The leading symptoms were cerebral, but after death the liver was found of a pale colour, and its right lobe contained a large abscess. The pia mater presented arborescent redness, and an ounce and a half of fluid

Dec. 3	A. W.	21	Febris Remittens	0	0	3	16	Calomel, ipecacuanha, and purgatives, cold douche to the head and warm bath, a blister to the nape of the neck, effervescing draughts, with diuretics; after a remission on the fourth day, quinine, with calomel, ipecacuan, and opium.	9	4	Died	This was a man of the 13th Hussars, recently arrived from Europe. His face was flushed and hands tremulous, and on the third day after admission he had subsultus, his tongue was dry and brown, his teeth were soon after covered by sordes, and his tongue became black. A small quantity of wine and arrowroot was given on the fourth day. After death, the incised substance of the brain showed many bloody points, the heart contained yellow polypi, and the mucous glands of the lower part of the ileum and cæcum were ulcerated.
Dec. 6	J. M.	26	Febris Remittens.	1	Not known	2	8	Calomel, ipecacuanha, opium, and purgatives, cold douche to the head and hot foot-bath, effervescing draughts, with diuretics, a blister to the nape of the neck, quinine, with calomel and opium, and latterly, wine.	23	6	Died	This was a woman of dissipated habits and much addicted to drinking, in whom the febrile symptoms were congestive, and marked by tenderness at the epigastrium, irritability of stomach, a feeble pulse, beating 116, delirium, drowsiness, diarrhœa, and lastly, miliary eruption on the skin. There was no inspection of the body.
Dec. 14	J. B.	—	Febris Remittens.	1	16	2	6	Head shaved and cold lotion applied to the head, calomel, ipecacuanha, and opium, with purgatives, the warm bath and effervescing draughts, with diuretics; subsequently, quinine, combined with blue pill and ipecacuanha.	33	8	Cured	This patient, who belonged to the 13th Hussars, had suffered from intermittent fever in October, and was ill for several days in barracks before admission. The febrile symptoms were irregular, and combined with a considerable degree of hepatic affection.

The preceding is an abstract of the prevailing character of remittents, admitted into the General Hospital at Bombay, for 1839, having formed part of the author's Annual Report on the diseases for that year. It is here appended as sufficient illustration of the general system of treatment requisite in remittent fevers. The quantities of blood abstracted, generally or locally, are noted in the columns, and when coupled with the prevailing character of the fever, in particular cases, and the other remedies prescribed, may in some measure serve as a practical guide to these inexperienced in the types and modifications of such fevers.

33, Oxford square, London, *January*, 1849.

BIBLIOGRAPHICAL RECORD.

On Femoral Rupture, its Anatomy, Pathology, and Surgery, with a new mode of operating, applicable to Cases of Strangulated Hernia generally. With Plates. By John Gay, F.R.C.S., Surgeon to the Royal Free Hospital. 4to. pp. 97. London: Samuel Highley, 32, Fleet-street. 1848.

The subject of Hernia has at all times demanded, and has of late years attracted, the most serious attention of practical surgeons, both on account of the gravity of the affection, the interest, anatomically and pathologically attached to it, and the excessive mortality which has accompanied it. Not even have the most severe operations of surgery, and those of great magnitude, been attended with so little success as the proceeding employed for the relief of a strangulated hernia; this important fact has been attentively considered, and its causes have been inquired into, by several able surgeons, who have consequently been led to suggest modes of practice differing from that commonly employed.

The author of the present treatise has had the same object in view; and his chief aim in writing his work is to recommend a new mode of operating in femoral hernia, by which he hopes to render the proceeding less difficult and less liable to be followed by bad results.

The greater portion of the work is taken up with the consideration of the anatomy of femoral hernia, and certainly the author has entered most minutely into this part of the subject, and has evidently taken a great deal of trouble to demonstrate that which we think has already been well investigated by other anatomists, and which is generally well understood.

It is not our intention to examine, in detail, part of the treatise; but there are one or two points about which Mr. Gay has opinions of his own, and in which he differs from other anatomists; we shall, therefore, briefly call attention to them.

He considers that erroneous notions have been entertained with respect to that structure which has been termed Hey's ligament, and that, in reality, that which was described by Mr. Hey as such, is not the process of fascia lata, prolonged from the falciform border, but that it consists of a band of fibres situated in the deep layer of the fascia lata, beneath Poupart's ligament. These are its relations as described by the author:—"It is situated at some little distance from and beneath the crural arch, the iliac extremity being on its femoral side; but as the whole band has a greater tendency to the horizontal direction than the arch, it follows that, on its way towards the pubes, it attains the level of the posterior thin edge of the ligament about midway between its extremities. To this edge it is then united by means of a narrow and firm membranous slip—the floor of the inguinal canal—which ceases to exist at the point at which the thin edge referred to merges into the semilunar or free edge of Gimbernat's ligament. It surrounds and supports the front wall and pubic angle of the *sheath* of the femoral vessels, the *orifice* of which it at the same time determines. Thus it intervenes between the deep thin edge of the crural arch and the first portion of Gimbernat's ligament, and the sheath of the vessels, and may well be considered as the 'deep crural arch.'" (p. 15.) And further, in a note, he says:—"For reasons which I am about to adduce, I believe that this ligamentous band, and not the falciform process of the fascia lata and its fibrous appendage, is the structure to which Mr. Hey directed especial attention and termed the 'femoral ligament'; at all events, that its importance demands for it a distinct recognition as such."

It certainly is difficult to understand precisely, by Mr. Hey's description, what he meant; that described in the plate, in the "Surgical Observations," appears to be the process from the falciform border of the fascia lata, and is quite unlike that delineated as such by our author, in his plate, both in appearance and situation. There is no doubt, however, of the importance of this structure as forming part of the ring, and necessarily exciting pressure upon the neck of a hernia.

The author describes, with minuteness, a band of fibres formed in the substance of the femoral sheath; above and behind that which he terms Hey's ligament; he considers that they are the same as those depicted by Hesselbach, and that they have a considerable share in forming the stricture.

Mr. Gay's views, with respect to the cause of the stricture in femoral hernia, are somewhat at variance with those generally entertained. Amongst other tissues, he enumerates the so-called Hey's ligament and Gimbernat's ligament as forming the stricture, and then says:—"These ligaments are the most constant seats of stricture external to the neck of the sac. It is generally admitted that, as alleged by Sir A. Cooper, the contracting force which these several structures are capable of exerting upon a hernial protrusion, resides equally in every part of the ring or circle which they co-operate in forming. This view, however, is not in unison either with the results of experience derived from operations, or with the inferences to which a careful consideration of the disposition of the parts in question must lead. The femoral ligament exerts its force upon an impacted tumour in the direction from *before backwards*, and *this* force would inevitably be greater in amount than *that* which Gimbernat's ligament is capable of exciting in the *transverse* direction, since the *former* would meet with the antagonism of an unyielding body—the ramus of the pubis—whilst the *latter* would only be opposed by the extensile tissues of the pubic septum of the sheath, and the soft parts on its iliac side." (p. 48.)

After having described the nature and treatment of hernia, and entered into the causes of death, the author finishes his work by describing his operation, the principle of which is non-interference with the hernial tumour. "The incision by which the seat of stricture is to be reached, is made at the farthest possible distance from the protrusion, and through tissues free from the results of morbid change. It is adapted to all cases where the seat of stricture is external to the sac." (p. 90.)

We refer the reader to the work itself, for the mode which Mr. Gay employs in the performance of the operation.

The main novelty in the proceeding is the making a small incision, contiguous to, but not over, the hernial tumour. Relieving, or attempting to relieve, the stricture, without laying open the sac, is nothing new. Of course, the same objections which apply to that mode of procedure, obtain here as well, perhaps even with greater force, as the incision recommended is so limited, and away from the tumour, that if in the course of the operation it be found necessary to open the sac, additional difficulty would exist, and it would be necessary to make an extended cut, which, if possible, should always be avoided.

It requires the test of experience to prove how far this proceeding may be employed, for as yet the author, it appears, has only tried it in some half dozen cases, which he has recited, and he does not tell us in how many cases he has attempted it, and found it unsuccessful. We are fully convinced of the great advantage of disturbing the tumour as little as possible, and not wounding the peritoneum, if the stricture can be relieved by other means; for this reason, therefore, in some cases, we believe that this operation may prove highly useful; on the other hand, it cannot be doubted, that in numerous instances it will be found inapplicable.

We cannot finish the notice of this work without remarking, that Mr. Gay deserves great credit for the interest and zeal he has evidently employed in

the investigation of the subject; we may almost say, he has been over zealous, and in discussing the anatomy of Femoral Hernia has somewhat complicated it. The book is well got up, amply furnished with notes, and illustrated with three expressive plates.

PRACTICAL TREATISE ON THE DISEASES PECULIAR TO WOMEN; illustrated by Cases derived from Hospital and Private Practice. By SAMUEL ASHWELL, M.D., late Obstetric Physician and Lecturer to Guy's Hospital, Third edition. pp. 772. London: 1848. (Continued from p. 64.)

PART II begins with some remarks on the difficulty of the DIAGNOSIS IN COMPLICATED UTERINE DISEASE, and on the various modes of diagnosis: the value of evidence from the *History of Symptoms, Digital Examination, the Speculum, the Stethoscope, and the Discharges*, being considered seriatim. The importance it deserves is given to the speculum; on the one hand, the author combats its indiscriminate use;—on the other, he insists on the benefit to be derived from its employment, in all the otherwise concealed diseases of the cervical region of the uterus. It is only now, that the speculum is beginning to assert its true utility. It is probable, however, that the speculum is not such a novel instrument in this country as some have imagined. Not long since we saw the invention of the speculum uteri publicly ascribed to M. Recamier; it is, however, a fact that Harvey, in his Exercises on Generation, *describes the use of the speculum in a case of sterility caused by an ulceration of the cervix, and which was cured by injections, the lady subsequently bearing children!* Some excellent remarks are made by Dr. Ashwell on the difficulty of indicating the state of the os uteri from the state of the discharges. A pathology having such a basis must be unsound. An error of this kind vitiates to a very considerable degree the work of Mr. Whitehead of Manchester; an error which we are surprised has not hitherto been pointed out. This gentleman has constructed a table of 2,000 cases, which rest not on specular examination, but on the recollections which the patients themselves had of this or that coloured discharge. That is to say, 2,000 women were taken, their previous discharges and abortions inquired into, and from this very unsubstantial evidence, tables are constructed showing the comparative frequency of purulent and mucous leucorrhœa, and the frequency of abortion in the two forms of discharges. As Mr. Whitehead considers purulent leucorrhœa to be invariably the result of "suppurative inflammation," his tables assume to show, upon such evidence, the frequency of abortion from suppurative disease of the uterus. Such rash conclusions are greatly to be deprecated.

In discussing the PROGNOSIS OF ORGANIC DISEASE OF THE UTERUS, Dr. Ashwell meets the question—Can we, at the commencement or early part of a case, distinguish positively between malignancy and non-malignancy? Dr. Ashwell frankly confesses his inability to do so in all cases; and he lays it down as a rule that, when there are doubts, "it is right to treat the case as though it were not malignant disease; and, at all events, for a time, to give the assurance—a most important item in the treatment—that whatever else the disease may be, it is *not* cancer."

He observes, very forcibly, that some threatening cases recover, and some cases of carcinoma remain stationary, or nearly so, for many years. If such patients were told the whole of our medical doubts, they would be speedily destroyed. He says,—

"There are few women who could endure the sudden divulging of the nature of such a malady as cancer, without most injurious depression; and there are certainly not many who, with a conviction of his fatality, like the sword of Damocles, hanging over them, could practise as they ought, and pursue as they must, for every beneficial purpose, the self-denial on which its restraint mainly depends."

On the important subject of cancer, Dr. Ashwell relies implicitly on the views of Dr. Walshe.

The chapter on FIBROUS TUMOURS OF THE WALLS OF THE UTERUS is of extreme importance. Dr. Ashwell, in opposition to the views of Andral, Carswell, Bayle, Lobstein, and others, maintains that these tumours are *always* cancerous and malignant in their nature. The following is a summary of the reasons he adduces in favour of this view:—

"1. They possess the structure of compound adventitious cysts, the basis of this class of heterologous formations. 2. In the colour of the contained mass, and in the arrangement of the membranous septa or bands, the containing tissue, they are identical with schirrus. 3. In hardness, occasionally justifying the application to them of the term slow-cancer, they are not to be distinguished from the varieties of carcinoma already mentioned. 4. They occur very frequently in conjunction with growths of undoubted malignancy in other parts of the uterus. 5. And, lastly, they possess one especial attribute of malignity—incurability."

The objection may be made to these postulates, that they do not include that power of assimilating the material intended for other tissues, so characteristic of carcinoma in other organs, or that special cachexia by which cancer destroys life. To this, the reply of Dr. Ashwell is, that though they often remain in a state of isolation, producing little constitutional disturbance; they do, nevertheless, in some cases, both involve other tissues in destruction and self-assimilation, and destroy life by the cachexia they induce. These phenomena, though rare, are seen often enough to prove, in the author's opinion, the possession, of even the most undoubted qualities of cancer, by this description of tumours. It is important to recognise these tumours, when they are tuberculous in their seat, from polypous growths. The following will present the differential diagnosis:—

POLYPUS.	FIBROUS TUMOUR.
Absence of linear structure . . .	Linear structure.
Generally a single tumour	Often more than one tumour.
Great vascularity	Little vascularity.
Absence of sensibility	Never insensible.
Hæmorrhage from the growth itself.	Hæmorrhage from the mucous tissue.
Removal by ligature	Non-removal by ligature.

The treatment Dr. Ashwell recommends, is chiefly the administration of iodine, abstinence from sexual intercourse, mild antiphlogistic remedies, narcotics, particularly in the form of suppositories, conium and poppy injections, cold to arrest hæmorrhage, aperients with the same view, and the avoidance as much as possible of physical and mental exertion. A caution is given as to the use of the ergot in restraining hæmorrhage in these cases; the author has found it increase the hæmorrhage.

The observations on the Induction of PREMATURE LABOUR, in organic uterine or ovarian disease are most valuable; and this subject is one for which the profession is especially indebted to Dr. Ashwell. It is proved very clearly, that in organic disease, if pregnancy be permitted to proceed to the full term, inflammation, suppuration, and the extension of the disease takes place to such a degree as to destroy the patient; while in cases in which premature delivery is induced, the dangers produced by pregnancy are greatly diminished, and few if any ill results follow from the careful performance of the operation for exciting abortion. The time recommended by Dr. Ashwell for the operation in organic disease, involving any part of the uterus, is about the sixth month. Up to this time, pregnancy and the development of the uterus rarely give rise to any very great amount of mischief. There is hardly a more satisfactory point in the modern improvements of obstetrics, than the extension of this operation to cases in which parturition or prolonged pregnancy is almost necessarily or inevitably fatal to the mother.

A chapter is devoted to ORGANIC DISEASES OF THE CERVIX AND OS UTERI.

Authors have thought the monthly molimen of menstruation a predisposing cause of these affections; Dr. Ashwell holds a modified opinion, maintaining that the catamenial discharge is a reason why they do not progress rapidly during the menstrual era, and pointing to the very significant fact, that these disorders progress most rapidly after the final decline of menstruation. Of cancer, and its especial seat in the cervix uteri, an excellent description is given. Dr. Ashwell reiterates with emphasis a former assertion of his, originally made in the Guy's Hospital Reports. He believes,—

"That hard tumours of the cervix, and indurated puckering of the edges of the os (conditions which frequently terminate in ulceration) may be melted down and cured, by the topical application of iodine, aided by the recumbent position, abstinence from sexual intercourse, cupping on the loins, a mild unstimulating and often a milk diet, gentle aperients, narcotic injections into the vagina, and the almost daily use of the warm hip-bath."

These remarks, it should be said, are extended by Dr. Ashwell to "malignant tumours." Undoubtedly all the best writers agree in attributing the origin of cancer uteri to congestion and ulceration of the organ. As the advanced treatment of these distressing cases, pursued from the most simple prophylactics to the most severe measures, are so almost entirely limited to the control of the progress of the disorders, and the mitigation of suffering, we shall not pursue it further than to say, that all Dr. Ashwell's observations are marked alike by caution, sagacity, and a high tone of benevolence. His greatest reliance is on the *nitrate of silver* and the *oxide of zinc*, before the disease has approached its fatal termination. The operation of excision of the os and cervix is condemned in the vast majority of cases by the results which have followed it, but Dr. Ashwell would fain hope that—

"Perhaps as uterine diseases are so much better understood now, and the absolute necessity for *early* examination by the speculum, as well as the finger, so generally acknowledged, opportunities may occasionally present themselves for its justifiable performance."

The next part of Dr. Ashwell's valuable book, that which is devoted to the Simple or Syphilitic Ulcerations, of the os and cervix uteri, we shall pass over, as we shall shortly have another occasion to enter fully upon this subject, when reviewing the second edition of Dr. Henry Bennett's work. In connexion with other forms of ulceration, Dr. Ashwell describes, in graphic terms, the corroding ulcer of the uterus, scarcely less dangerous, though somewhat less painful, and more rare, than carcinoma. There is no induration, no schirrous deposit; but the uterine tissues are corroded and destroyed by a specific ulceration, which Dr. Ashwell happily compares to lupus of the face. The ulcerative process eats away the healthy tissue, biting as close as it can, so that an awful amount of ulceration may exist, the tissues in its vicinity being perfectly healthy.

"The consequence is, that unlike what occurs in advanced cancer,—where, owing to the new deposits and carcinomatous growth, the cavity of the pelvis is filled, and the uterus becomes fixed and immoveable,—in corroding ulcer, especially in its last stages, there is an empty space in the pelvis, and the remaining portion of the womb is especially moveable. In the only two cases I have seen, the fœtor attending on the ulceration was most intense, and probably peculiar to the disease."

In a case we recently treated, we had an opportunity of verifying the graphic fidelity of these remarks. In this disease, after the failure of lunar caustic, narcotics, and palliative remedies, Dr. Ashwell is of opinion, that, favourable circumstances concurring, the operation of excision of the cervix uteri might be quite justifiable.

Cauliflower Excrescence.—As regards frequency, this disease lies between corroding ulcer and cancer, being more frequent than the former, less so than the latter. We quote Dr. Ashwell's definition:—

"A morbid growth of the os uteri, consisting of minute ramification

arteries, connected by a flocculent tissue, and covered with a secreting membrane. Its surface has somewhat of the granulated feel of the broccoli; it bleeds on slight handling, and almost constantly pours forth a watery discharge. It varies in size, is nearly painless, and proves its malignancy by returning after removal either by the knife, ligature, or caustic."

The treatment consists of the attempt to cure by radical measures, as the ligature, caustic, or excision, by which life is often prolonged; and the palliative plan, consisting of the cold douche to the back, aperients, local abstractions of blood, avoidance of physical stimulus and other sources of excitement, the cold alum hip-bath, astringent injections, etc.

Occlusion and Rigidity of the Cervix Uteri,—Which are causes both of sterility and difficult parturition, find a place in Dr. Ashwell's work. The author directs attention to this malformation, or disorganization, as it is met with in parturition. We may sum up this chapter by saying that, when the os uteri is in a state of perfect occlusion, incision for the formation of an artificial os is the safest proceeding. In extreme and unyielding rigidity of the os uteri, after waiting fruitlessly for dilatation by the pains, Dr. Ashwell prefers incision to either dilatation by the finger, or non-interference. The cases appended to this part of the work are highly interesting. Many of Dr. Ashwell's expositions on this point are highly original.

On the subject of Uterine Polypus we shall only refer to Dr. Ashwell's opinion of the best treatment. On the whole, he prefers removal by ligature, especially in large polypi, to avulsion, enucleation, or excision, though he admits the many advantages possessed by excision, particularly in small growths, where they can easily be drawn within reach of the scissors or the bistoury, and where there is less danger of hæmorrhage than in larger tumours. Appended to the chapter on polypi, are some admirable observations on polypus complicated with fibrous tumour, malignant growth of the uterine cavity, spongoid tumour, and ulceration of the mucous lining of the uterus.

The next department treated of by Dr. Ashwell, namely Displacement of the Uterus, is one of growing importance. The various conditions requiring treatment under this head, are consequently described with considerable minuteness. The obstetric practitioner will here find a full account of relaxation, prolapse, and procidentia of the uterus; elongation of the cervix uteri; inversio uteri; anteversion and retroversion; anteflexion, retroflexion, and hernia, of the impregnated and unimpregnated organ. An impartial description is given of the various mechanical measures by which these mechanical derangements are to be remedied; and it is with these principles and details of treatment, that we shall chiefly concern ourselves; as, to enter into all the minutiæ of cause, pathology, and effects, would require not only the space occupied in the work of Dr. Ashwell, but a volume itself.

Briefly, then, in relaxation and slight prolapse, the recumbent position, tonics, and astringent injections, are generally sufficient. Dr. Ashwell lays considerable stress on the use of a strong alum hip-bath, daily, at a temperature of 95°. In procidentia, the first point is the return of the organ; generally the reposition of the uterus is easy, but occasionally fomentations, leeches, and scarification, are required before the procident uterus can be passed up the vagina. It often happens that, in such cases, ulcerations of the uterus require as much attention as the mechanical displacement; in these cases the return is impossible, and we have no choice but to amputate the organ, or to render its displacement as little injurious as possible to the constitution of the patient. Of pessaries, Dr. Ashwell entertains a very high opinion; in procidentia he prefers them to any of the operations which have been devised for contracting the vagina, or to the various abdomino-uterine mechanisms which have been employed for supporting the uterus by pressure upon the perineum. Of the various pessaries in use, Dr. Ashwell prefers the circular, or boxwood ring-pessary, as the one least likely to produce inconvenience or mischief to the vagina or neighbouring organs, and as not inter-

fering, in any way, with the performance of the sexual functions. Of Dr. Ashwell's account of inversion of the uterus, we shall only observe, it is carefully and practically composed; but it does not offer any very salient points for criticism or quotation.

The uterine versions and flexions demand a longer notice at our hands. Very great discrepancy of opinion exists respecting these affections. Thus Dr. Meigs, for instance, one of the most truthful of living writers, says that, in an extensive practice of thirty years, "he has not been able to meet with more than *one single decided sample* of anteversion." On the other hand, Lisfranc, the great Bobadil of uterine pathology, asserts, that anteversion is infinitely more frequent than retroversion; and this is "from hundreds, he might say, *thousands of observations*." (!) Authors, in giving their statistics of malposition of the uterus, ought to mention whether the woman was in the recumbent or upright position when examined; and perhaps, by so doing, some discrepancies, at present so startling, may be reconciled. Dr. Ashwell also correctly observes: "All practical men know that the uterus varies naturally in its position, in its degrees of mobility, and in the influence exerted upon it (as to position) by a loaded or empty rectum or bladder."

This is strictly true. The uterus is very seldom in precisely the same position in any two different subjects, or in the same subject at two different times, so that any man running wild upon the subject of flexion and version, would only have to number his cases of displacement by the number of cases he had examined. Undoubtedly, all these malpositions, particularly retroversion, are occasionally met with, and require careful and continued treatment; but the assertion of their unreal frequency by some writers, leads many practical men to disbelieve their existence altogether, and to consider this subject merely as a branch of empiricism. Dr. Ashwell's treatment of such cases is rational and worthy of the confidence of the profession; it consists of mechanical reposition, the recumbent posture, the reduction of the uterus to its natural size, local astringents, and the support which can be derived from a well-adapted pessary. The use of the "sound" as a means of diagnosis is strongly reprobated; he considers it likely to *make*, in the first instance, the malpositions which it subsequently *diagnosticates*. Dr. Simpson's other mechanism for retaining the retroverted uterus *in situ*, after it has been replaced, is disapproved, and spoken of, as the "ivory one-pronged fork." Dr. Ashwell declares that he has seen the most serious mischief follow upon its use.

We are obliged to dismiss the subject of DISEASES OF THE OVARIES very cursorily; though the section relating to ovarian dropsy, and its treatment, would have been well worthy of extended analysis, did our space admit. The following words convey Dr. Ashwell's estimate of the hold the operation of ovariotomy is likely to have upon practice:—"This dangerous operation, like all other violent innovations, will ultimately come to be correctly appreciated. The good sense of medical men may be for a time partially compromised, by too favourable reports of the safety and success, not only of frightful surgical operations, but of unjustifiable interruptions of natural processes; but, by and bye, these things are weighed in the balances and found wanting, and calmer judgment consigns them to oblivion."

The last section of the work is devoted to DISEASES OF THE EXTERNAL ORGANS OF GENERATION, in which many highly original observations and views of treatment are given. As a supplement, some account is rendered of the morbid effects of UNDUE LACTATION; but to this we can merely refer.

It remains for us to give our general estimate of Dr. Ashwell's work; and this we do with considerable pleasure. It is essentially practical. The author is more intent upon what he has *seen* at Guy's and in private practice, than upon the bibliography of his very important and comprehensive subject. Excellences and omissions arise out of this circumstance; but we are glad to say that the former much preponderate. If there be no elabo

disquisitions on the views of many foreign authors, there are never wanting full and faithful descriptions to guide the English practitioner among the difficulties he may meet with. This is indeed the chief excellence of the work. The young and the experienced practitioner may safely *treat* from its pages. Dr. Ashwell has aimed at this, rather than at originality; though, in the course of the work, many new and important observations are met with. Throughout every one of the 772 pages, to which the work extends, there runs a sound and sagacious intelligence. The value of old things is maintained, not because they are old, but because they are useful; new things are almost invariably treated with a cordial welcome; and groundless innovations are treated as they deserve. This is high praise; but it is merited by the work.

HINTS TOWARDS THE FORMATION OF A MORE COMPREHENSIVE THEORY OF LIFE. By S. T. COLERIDGE. Edited by SETH B. WATSON, M.D. 12mo., pp. 94. London: 1848.

The Unity of Human Nature, according to Mr. Coleridge, is composed of two elements combined, viz., soul and body. Human life, as treated of by him in the work before us, is merely the life of the body. His hypothesis as to the nature of this life, we can only give in his own words:

"The constituent forces," says he, "of Life in the living human body, are: first, the power of length, or REPRODUCTION; second, the power of surface (that is, length and breadth), or IRRITABILITY; third, the power of depth, or SENSIBILITY. With this observation I may conclude these remarks, only reminding the reader, that Life itself is neither of these separately, but the copula of all three; that Life, *as* Life, supposes a positive or universal principle in Nature, with a negative principle in a particular animal,—the latter, or limitative power, constantly acting to individualize, and, as it were, figure the former. Thus, then, Life itself is not *a thing*—a self-subsistent *hypostasis*—but an *act* and *process*, which, pitiable as the prejudice will appear to the *forts esprits*, is a great deal more than either my reason would authorize, or my conscience allow me to assert, concerning the Soul as the principle both of Reason and Conscience." (Pp. 93-94.)

Mr. Coleridge denies the propriety of dividing the objects with which we are surrounded, into animate and inanimate; and maintains that the irreducible bases of chemistry, the various forms of crystals,—nay, even the rocks, the mountains, and the globe itself, share with us the gift of Life!!

The little volume, with a glimpse at the general scope of which we have now presented our readers, strikingly illustrates, in every page, the peculiarity of the mind of its author. In immediate juxta-position are flashes of brilliant genius, and ebullitions of what most men will designate as only elaborate nonsense. It is to be presumed that Mr. Coleridge always had, in his own mind, ideas corresponding to the words he has written; but certainly it often happens that the language employed is not calculated to convey any distinct ideas to others. In some of his most promising paragraphs, we frankly confess that we have failed to discover any meaning. For example: at page 53 we are told, "that the oneness of space and time is the predicate of all *real* being"; and in explanation (!) it is said—"to form the first conception of a *real* thing; we state both as one in the idea,—duration. The formula is: $\overline{A=B}+\overline{B=A}=\overline{A=A}$." We paused long at this explanation, but failed adequately to grasp the idea which the philosopher had struggled to embody. Mr. Coleridge's essay on life, notwithstanding its obscurity and eccentricity, bears so strongly the impress of originality and genius, that we have thought it right to bring it under the notice of our readers.

MEMORANDA ON POISONS. By T. H. TANNER, M.D. 24mo. pp. 63. London: 1848.

Medical manuals for the waistcoat pocket are generally, we think, of questionable utility; yet as they are in demand, we cannot wonder at authors and publishers producing them. So far as *tests* are concerned, the information conveyed in so tiny a book as that now before us must, for medico-legal purposes, be nearly valueless. The notes on treatment, however, may assist the memory of the young practitioner in some unexpected emergencies. The book, though not intended by the author to be so used, is very likely to be employed by those students who, after years of idleness, are obliged to cram their heads with the minimum of information exacted by the Boards.

WONDERS DISPLAYED IN THE HUMAN BODY IN ITS ENDURANCE OF INJURY. From the Portfolio of DELTA. With Etchings by the Author. 8vo. pp. 39. London: 1848.

This pamphlet is "a brief catalogue of pathological eccentricities", after the fashion of Dr. Millingen's *Curiosities of Medical Experience*. We are told of Miss Lucy P. (an American lady), who passed sand at the same time from the mouth, nose, and ear; of various cases of luminous emanations from the human body; of spontaneous combustion; knife swallowing; recovery from extraordinary injuries, etc. etc. Delta mentions "wonders" seen by himself. Thus, he says—"We have ourselves taken a small basin-full of brain from the fractured cranium of a man whom we had previously restored from suspended animation."—p. 36.

THE INTRODUCTORY LECTURE, delivered at King's College, London, on opening the Medical Session of 1848-49. By WILLIAM FERGUSSON, F.R.S., Professor of Surgery in King's College, Surgeon to King's College Hospital, etc. pp. 32. London: 1848.

The address of Professor Fergusson is well worthy of perusal, more particularly by the student, and the younger members of the profession. It is forcibly written, and contains solid and sensible advice. We remark with pleasure, that diligence in all departments of medical study are—showing the sound discretion of the learned Professor—equally indicated; and that no one branch is unduly exalted above the rest.

THE SERPENTINE "AS IT IS" AND "AS IT OUGHT TO BE": AND THE BOARD OF HEALTH "AS IT IS" AND "AS IT OUGHT TO BE". By EDWARD JOHN TILT, M.D. pp. 67. London: 1848.

The principal part of this pamphlet recently appeared as leading articles in the Lancet. Dr. Tilt exposes the absurdity of having a non-medical Board of Health. His demand for a removal or abatement of the Serpentine River nuisance must, we imagine, at once be complied with, if his allegations as to its pestilential nature be not greatly overstated, which we do not believe them to be. It seems very strange to be true, that fifty acres of stagnant water, in the midst of Hyde Park, should be under the special protection of the President of the Board of Health! But we fear it is a fact which cannot be denied. "Will it be credited," says Dr. Tilt, "that Lord Carlisle is not only *First Commissioner of Woods and Forests*, and therefore interested (or should be so) in the proper conservation of public grounds—he is only *President of the Board of Health*, and therefore bound to set an example of removing nuisances, forbidden by his own official instructions—but he is also the PATRON OF THE SERPENTINE BATHING CLUB!"—p. 17. Dr. Tilt writes in a lucid and powerful style: and the matter, as well as the manner of the pamphlet, seem calculated to command attention.

CRITICAL DIGEST OF THE BRITISH AND FOREIGN MEDICAL JOURNALS.

PRACTICE OF MEDICINE AND PATHOLOGY.

RECENT MEMOIRS ON SCURVY.

THE RECENT PREVALENCE OF SCURVY has arrested the attention of the profession, and called forth a variety of valuable memoirs. The following is an alphabetical list of the papers now before us, regarding which we propose making a few remarks:

1. ANDERSON, Dr. A., Glasgow.—*Edinburgh Monthly Journal*, Jan. 1847.
2. ANDRAL, M., Paris.—*Gazette Médicale*, 1847, p. 534.
3. BALY, Dr., London.—*London Medical Gazette*, vol. i, for 1841 and 1842.
4. BELLINGHAM, Dr., Dublin.—*Dublin Medical Press*, 21st July 1847.
5. CHATIN ET BOUVIER, MM.—*Journal du Chimie Médicale*, Mars 1848.
6. CHRISTISON, Dr., Edinburgh.—*Edinburgh Monthly Journal of Medical Science*, June and July 1847.
7. CURRAN AND ALDRIDGE, Drs.—*Dublin Quarterly Journal of Medical Science*, August 1847.
8. FAUVEL, RECQUEBEL, AND RODIER, MM.—*Archives Générales de Médecine*, Août 1847.
9. FOLTZ AND FRICK, Drs.—*American Journal of the Medical Sciences*, January 1848.
10. GARROD, Dr., London.—*Edinburgh Monthly Journal*, Jan. 1848.
11. LAYCOCK, Dr.—*London Medical Gazette*, 2nd April 1847.
12. LOSSDALE, Dr., Carlisle.—*Edinburgh Monthly Journal*, August 1847.
13. RITCHIE, Dr., Glasgow.—*Edinburgh Monthly Journal*, July and August 1847.
14. SHAPTER, Dr.—*Provincial Medical and Surgical Journal*, 2nd June 1847.
15. STIFF, Mr.—*Medical Times*, June 1847.

A late popular lecturer, in the Edinburgh School of Medicine, used to address his class in this fashion: "Gentlemen, I have nothing to say on Scurvy, we don't see it now-a-days; those of you who intend to enter the navy must, however, read up the subject." Such language may have been excusable twenty, or even five years ago, in Edinburgh; for Dr. Christison informs us, that no case had been met with for more than thirty years in the infirmary, till the late outbreak occurred. At the present time, however, Scurvy appears to us to have great claims on the attention of the profession. The surgeons of our navy and merchant vessels are no longer the interested parties; indeed such is the discipline on board our ships, and so carefully is the dietary of the sailor adapted to the circumstances to which he is exposed, that many seniors of the "cockpit" have not seen the disease. But the last two years have shewn that the hospital physician, the general practitioner, the "union doctor," and dispensary apothecary, are now called upon to examine into its causes and treatment.

It had become a matter of general belief, that Scurvy died with the last century; for, excepting in badly equipped vessels, in horribly managed jails, and lunatic asylums the disease did not manifest itself. The increased cultivation of succulent vegetables, and their abundant use amongst all classes of the community, made it in the highest degree probable that Scurvy would

not again appear in this country And he would have had large powers of prophecy who could have foretold, a few years ago, that Scurvy would reappear in the years 1846 and '47, and that so extensively, as to be met with, not only on the banks of Tay in Perthshire,—in the "Kingdom of Fife," and the mountain ranges and secluded glens of Ettrick and Yarrow, but also in the fertile Lothians, the sunny vales of Cumberland, the rich demesnes of ecclesiastical York, and the still more genial clime of our south-western counties; that it would lay prostrate, not only the ill-fed, badly clothed, and houseless poor,—the natural victims to disease,—but also the well-to-do artisan, the labourer, and shop-keeping class, who could get their bread and beef and beer;—not only the inmates of prisons, or houses of refuge, and the denizens of the wretched hovels of our pent-up cities, but the sons of rural toil—the village maid, and the muscular, iron-framed "navvie," whose avocations were pursued under the free canopy of heaven, with balmy breezes, and smiling nature around them! Had the profession been conversant with the disease, or studied its history with care, the partial deficiency in the potatoe crop, during some few years, would have surely elicited from them words of warning. It was far otherwise, however; and when the crop of 1845 shewed a marked deterioration, men merely ran to and fro in search of animalcules—the supposed destroyers of the tuber; and there seemed to be great alarm for a time. This panic, which led to nothing practical or suggestive, subsided in the spring of 1846, to be re-awakened, however, in a tenfold manner in the autumn of that year, by the announcement of a total failure of the potatoes in many counties, but particularly in Ireland. The cry for provisions became loud and general—Government appointed a potatoe commission!—issued a large "blue book," and opened the ports and the public purse to the Irish. Private charity lent a powerful hand in the purchase and distribution of food and clothing. These noble efforts were successful to a certain extent, but nothing could atone for the want of fresh vegetables,—hence arose Scurvy, dysentery, and fever, affecting large numbers of the working population, not in Ireland alone, where the sufferings were however truly dreadful, but in several districts in the United Kingdom, generally accounted less liable to the influences of faulty living. We mention these circumstances at the outset, as there is no longer any doubt as to the fact of errors of diet and Scurvy standing to each other in the relation of cause and effect,—at least in the minds of those who have carefully digested the history of the past, or have had opportunities of observing the late outbreak of Scurvy. Potatoes and other vegetables were in a great measure destroyed in 1846, and Scurvy appeared in the ensuing winter and spring of 1847 from Perth to Cornwall; the same crops were tolerably good in 1847, and there was no manifestation of the disease.[1] Medical evidence is rarely more conclusive than this.

Symptoms and Causes.—In proceeding to analyze the late contributions made to our periodical literature, on the subject of Scurvy, we feel that we shall best contribute to the interests of our readers, by saving them the labour of consulting authorities, and do more ample justice to the memoirs under review, by adverting briefly to the leading characters and diagnostic signs of the disease. Its past history, by shewing how much irreparable mischief resulted from confounding it with other diseases, fully justifies us in this procedure. The accurate descriptions of Rousseus and Wierus, soon after the middle of the sixteenth century, were so overlooked in the seventeenth century, that we find Eugalenus, an oddity of a Dutchman (half astrologer and half physician), confounding various cutaneous disease

[1] Two gentlemen whose observations in 1847 would embrace about 300 cases, report t each of them has seen but one case during 1848. The field of their observations is v extensive—including town and country—rich and barren soils.

hypochondriasis, etc., with Scurvy. This attempt to amalgamate diseases of the most varied and opposite character under the head "Scorbutus," continued in credit amongst the learned of that period; and there was scarcely any check upon its absurdity, till the standard work of the accurate and philosophical Lind appeared in 1757. Indeed, few diseases, considering its frequency, have been so little understood; and seldom, if ever, has ignorance been attended with such direful results to humanity, as in the visitations of Scurvy. In the numerous wars, protracted sieges, and long voyages of discovery, of the last few centuries, this scourge has played a prominent part; not only decimating its victims, as the sword and climate may do, but prostrating, and almost annihilating, whole crews and bodies of men. And though such calamities cannot occur again, to any great extent, grievous errors are likely to be committed by inattention to the pathognomonic signs. During the last visitation, mistaking Scurvy for purpura was very common; and in one provincial hospital, to which we had access, Scurvy reigned for more than a month, before its true nature was detected! Many scorbutics, throughout the country, were treated for rheumatism; others, for debility and bruised legs; and not a few were classified as bilious fever-patients,—owing, we may suppose, to the change in the colour of the skin: and we are well aware that bleeding and heroic remedies were occasionally adopted. Nay, more, we had patients brought to us who had suffered severe scarification of the gums, followed by the application of nitrate of silver at the hands of practitioners of long experience, but of little knowledge. So that the surgeons in Louis IX's Christian campaign, in 1260, who cut away the gums of the scorbutic in a most unchristian manner, have had their vile imitators in the middle of the nineteenth century!

The leading features of Scurvy, are; the sallow, pale, dingy hue of the complexion, neither icteroid[1] nor anæmic, and assuredly not betraying a cancerous diathesis; languor, despondency, and aversion to exercise; muscular or neuralgic pains in the limbs, and occasionally in the loins; swelling, stiffness, and contraction of the joints,—more particularly the knee; a peculiar hardness of the tissues around the affected joints, which resists the strongest pressure of the fingers, and the impossibility of pinching up the skin, which seems glued to the parts beneath, as if tightly stretched over them; the skin considerably discoloured, and much variegated, of a yellow or reddish brown, and violet, or even darker tint, similar, in all respects, to that of a severe bruise. The same appearance is produced by subjecting any part of the body to slight friction or pressure. The gums are sore, swelled, spongy, and livid; in severe cases, concealing the teeth, or hanging like fleshy excrescences, and presenting a dark, spongy, sloughing mass; the teeth becoming loose, and the breath remarkably offensive. Hæmorrhage takes place from the gums (the most common variety), from the nose, intestinal canal, bronchi, and, more rarely, from the bladder. Petechial spots, surrounding, generally, the roots of the hairs, appear on the legs and thighs, and, less frequently, upon the arms and body. These dark spots are often mistaken for purpura and lichen lividus. Wounds, ulcers, and cutaneous disorders, are materially influenced; and if one part of the system be weaker than another, it is specially selected by the disease. The respiration is much affected by the slightest exertion, and fatal syncope often attends a sudden change of position; the pulse is not much changed, and the tongue is little at fault; the skin is frequently dry at the onset; the urinary secretion, and state of bowels, afford no constant indications; the appetite is good, but owing to the state of gums, can seldom be gratified; the digestive powers seem generally in good order. A case of Scorbutic Amaurosis was seen by Dr. Anderson, but none of our authors have noticed the affection of Nyctalopia, by no

[1] M. Fauvel considers the colour of skin to resemble the fading yellow colour of a disappearing bruise.

means an uncommon symptom, as it would appear from Blane (*Diseases of Seamen*, 3rd ed. p. 455) and Grant (art. "Nyctalopia", *Cyclop. Pract. Medicine*), amongst scorbutic subjects in warm climates. Authors are not decided as to whether the gums or limbs are first affected: at sea, we should expect the former, owing to the use of hard biscuit, etc., for food.[1]

Little need be said of the pathological appearances. The colour of the skin, the state of the gums, the contracted joints, with effusion into the subcutaneous tissues, and the fibrinous and sanguineous effusions met with amongst the muscles, and between these and the skin; beneath the peritoneal coat of the intestines, or between the mucous and muscular tissues, like patches of ecchymosis; or between the periosteum and bones of the lower extremities and jaws; and signs of hæmorrhage in the mucous passages, already alluded to, constitute all that is worthy of attention in this brief sketch.

Diagnostic signs.—We do not see how Scurvy can be mistaken for any other disease,—the spongy, livid gums, and sallow, dingy hue of skin are pathognomonic; then the extensive ecchymoses in the limbs, and the stiff contracted joints, with effusion into the neighbouring tissues: the appearance of the disease about the end of winter, or early in spring, continuing for weeks, always in connection with a change of diet, and always remediable by fresh vegetables and lemon juice, render the diagnosis simple and complete.

We see no grounds for multiplying varieties of the disease, as some of our authors have done. It savours too much of the system which justly fell under the censure of Lind and Sydenham a century ago. It may be difficult to arrange under any nosological head many of the abnormal states of the body characterized by debility, impaired nutrition, and cachexia, which are met with in seasons of scarcity of food—especially of fresh vegetables. This is no reason, however, for classifying them under the head of Scorbutus—a term embracing a well-defined disease. In the absence of a better term, Dr. Christison took refuge under the "epidemic constitution" of Sydenham, and Dr. Lonsdale fell back upon the "cachectic condition" of more remote authors. As the term incipient is used, in pathological medicine, as expressive of a state preliminary, or bordering upon the disease itself, would it not be well to designate as incipient scorbutus, those states or conditions of the body originating in the same circumstances, coeval with, and often becoming developed as the disease Scorbutus? In the wide fields for observation, which Drs. Curran, Lonsdale, and Ritchie enjoyed, they noticed the prevalence of mild dysentery, diarrhœa, and irregular febrile states, before, as well as during the manifestations of Scurvy; in the same manner as the "famine fever" of Ireland, and epidemics of that class in our own country, are ushered in by a series of phenomena, affecting considerable numbers of people, in which altered secretions and impaired nutrition occupy a prominent position.

Professor Christison's field of observation embraced the general prison at Perth, and the railway labourers and citizens of Edinburgh received into the Royal Infirmary. In Perth prison, Scurvy was more prevalent amongst the males than the females—contrary to what was observed in the Millbank Penitentiary in 1823; and those beyond adult age, or who had experienced long confinement, or were constitutionally infirm, were most liable to the disease. Let it be borne in mind, that the "separate system" of prison discipline is rigidly enforced in the institution. The diet was as follows. The breakfast and supper, taken conjointly, of the great majority of the male prisoners, who were on the third or highest rate, consisted of fourteen ounces of oatmeal, made into porridge, and nearly two ounces of treacle. Dinner, on four days of the week, consisted of twelve ounces of wheat bread, and two

[1] M. Fauvel observed at the Salpêtrière, that in the absence of teeth, there are no vegetations from the gums. His patients were advanced in life. In one case, where a single tooth remained, the gum was affected around it. On removing the tooth, the gum became on a level with the neighbouring parts, showing how much depends on pressure.

pints of barley broth, which contained one ounce of meat, four ounces of (decorticated) barley, about two ounces and a half of turnips, carrots, cabbage, leeks, and onions, together with a due proportion of salt. On one day of every week, each prisoner on the third rate had for dinner, in lieu of barley broth, two pints of pea soup, containing four ounces and a half of peas, one ounce of meat, and an ounce and a quarter of succulent fresh vegetables, duly seasoned with salt and pepper. On another day of every week, the dinner consisted of twelve ounces of bread, and two pints of barley milk, made with four ounces of barley, ten fluid ounces of skimmed milk, and a little salt; and another day it consisted of the same quantity of bread, and twelve ounces of white fish. It appears that the dietary of the prison admits of considerable variety, and that potatoes were occasionally substituted for oatmeal porridge at supper, but in 1846, owing to their scarcity and price, were given up. In March 1845, treacle was served to all the prisoners, except the infirm, instead of milk at supper; and in May of the same year, the same exchange was made at breakfast also. This change from milk to treacle involved, it seems, a daily loss of one ounce of nutritive proximate principle in the anhydrous state, and one ounce and a half of nitrogenous principle from the animal world. This loss, in the opinion of Dr. Christison, induced Scurvy. In further proof of this view of the case, he affirms that the restoration of milk arrested the progress of the disease, and that no antiscorbutic remedy was required. Skimmed milk, morning and evening, instead of treacle, and in severe cases, half a pound of meat at dinner, four times a week, or daily, produced an unequivocal effect. This we can readily understand: the diet of the prisoners, previous to the outbreak of the disease, was decidedly poor; added to which, there was a lack of fresh vegetables, quite sufficient to develop Scurvy. And the experience of all writers, from Rousseau down to our time, has shown that an improved and more varied diet always arrested the disease. The novelty[1] of Dr. Christison's views consists in his attributing antiscorbutic powers to milk; and the mode in which he has introduced his milk theory is calculated, at first sight, to make converts. A close examination, however, of his valuable memoir will detect deficiencies in the chain of evidence adduced. Thus, in the same prison, treacle had been substituted for milk on a previous occasion, for two years, at one meal in the day, without any appreciable effect, which could scarcely have been the case if milk be so essential. And it is somewhat strange, that it required fourteen months of this treacle-water system to develop the first indications of Scurvy—an objection which is thus explained by Dr. Christison.

"The food was not defective in quantity a long time, and the aid of concurring circumstances was necessary to develop the disease. It is very possible that the prisoners might never have suffered, had not some other cause cooperated, besides confinement and peculiarity of food. What this concurring cause may have been, it is not so easy to say. . . . But the question may be left here, as there are no data for proceeding further with it."

With the greatest deference to Dr. Christison, we are inclined to attach considerable importance to his data, as furnished in the following passage.

"In ordinary years, potatoes were occasionally substituted for oatmeal porridge; but in 1846 these were necessarily given up, as they were scarce and dear."

We should have liked to know the exact date of the omission of the potatoes. It is, however, a sufficiently significant fact, that *the year 1846 started the withdrawal of potatoes from the diet of the prisoners, and for the first time in the history of the institution, the advent of Scurvy!*

Following the series of articles (of which Dr. Christison's is the first), in the *Edinburgh Monthly Journal*, we now advert to Dr. Brewer's experience in

[1] We consider it a novelty in the present day, though well aware of Hufeland's panegyric on the virtues of asses' milk in scurvy.

the Glasgow Infirmary. Before scurvy made its appearance, Dr. Ritchie observed that debility characterized generally all diseases. Sthenic inflammations were rare, whilst much diarrhœa, dysentery, and fever, prevailed. Convalescence was tardy, and nourishing food was greatly in demand in the treatment of disease. The food of those who presented themselves as scorbutic had consisted mainly of bread, coffee and tea, porridge or brose of oaten or pease meal, barley, and occasionally ham and salt meat, and "several had had oatmeal porridge with milk morning and evening, and sometimes salt meat and bread daily to dinner." He remarks "the general fact in regard to the food of all was, *that it failed in variety, and in the quantity of its animal constituents;* and that, in all but a fraction of the cases, in which they were very deficient, *the patients had been exposed for months to a total deprivation of fresh succulent vegetables.*

Dr. Ritchie is very minute in his description of the disease, and this minuteness of detail has led him into the serious error of classifying a variety of cachectic conditions under the head scorbutus; thus we find anæmia, emaciation, diarrhœa, dropsy, hæmorrhage, &c., adduced in various groupings as constituting varieties of the disease. He believes that "the errors in diet, and the want, in particular, of proper vegetable food, were the true exciting causes; and that cold and other debilitating agents operated often as the predisposing causes of the disease." Passing over the treatment of three of his groups,—namely, the anæmic, hæmorrhagic, and rheumatic, to which suitable remedies were applied, we find the true scorbutic cases allowed 8 oz. of oatmeal made into porridge, with 14 oz. of unskimmed milk, night and morning; and for dinner, 12 oz. of animal broth, made with vegetables, 4 oz. of fresh meat, and 2 oz. of turnips or carrots. Besides these edibles, an orange and a pint of porter daily, and either two scruples of crystallized citric acid, or two ounces of lemon-juice, and half a drachm of nitre, every eight hours. Fomentations were used to the affected parts, and shampooing for half an hour twice daily in hot water, or with camphorated oil. Leeches were occasionally applied to relieve pain. Under this orthodox plan of treatment, some recovered in two weeks, more in three, and all within the month. Though not attaching much importance to fomentations and shampooing, we feel it but due to Dr. Ritchie to say, that after fifteen or twenty days' trial of the diet and remedies which, with *few* exceptions, proved successful in our hands, we have occasionally observed the stiffness of the joints much lessened by shampooing with anodyne or camphorated liniment.

Dr. Lonsdale's experience included a wide field of observation;—the weavers, artisans, and railway excavators, under his charge at the Cumberland Infirmary—the agricultural cotters and others on "the Borders"—and the men employed on the Caledonian and Nithsdale lines of railway. The disease manifested itself at Carlisle in April 1847, and about the same period amongst the *navvies* along the railway. Amongst the agricultural population in the Gretna district, who had a fair share of milk, Scurvy appeared much sooner. Dr. L. describes hæmorrhage from the gums as common, epistaxis as less frequent, bleeding from the intestinal canal as occasional, and hæmaturia as having been met with in a single case. There was a great tendency to menorrhagia, even where the scorbutic symptoms were not so apparent. In a number of instances the breathing was much embarrassed. The artisans, their wives and families, lived in poor dwellings, and complained of the severe winter, want of clothing, and short allowance of food. Bread, oatmeal, treacle in very small quantities, tea and coffee, with an occasional herring, formed their entire sustenance:—"in short, their food was deficient in quantity, miserably so in variety, and altogether incompatible with the maintenance of vigorous health and strength." *None had tasted potatoes since the harvest of* 1846. The excavators, or "navvies," lived on beef and mutton, salt bacon, suet puddings, bread and butter, oatmeal porridge and treacle, tea and coffee, and occasional potations of ale, and, we may infer

from the locality, whisky. They used large quantities of animal food—a pound of beef at a meal, and breakfast and dinner were much alike. They had *no potatoes for seven or nine months, and no fresh vegetables.* They had not been in the habit of using milk even when favorably placed for obtaining it. The agricultural cotters, on the other hand, had a fair or even large proportion of milk, from 10 to 32 ounces daily.

The whole of the evidence collected by Dr. Lonsdale shews most distinctly, that Scurvy arose from the absence of potatoes and fresh vegetables.

His infirmary cases, which were very severely held, had a pint of beef-tea, a pint of porter, 12 oz. of bread and the same quantity of milk, *per diem*; also ʒi or ʒij of citric acid and lemon-juice, with 4 oz. of infusion of gentian and water, as an acid drink. They soaked the bread in the beef-tea, and relished the acid drink amazingly. The worst cases had two oranges daily. The majority under this treatment recovered in fourteen days; there was, however, a difference in the speed of the recovery between the weaver and the excavator—the former, owing to his previous starvation, requiring three or more weeks. The great efficacy of oranges in Dr. L.'s hands fully confirms the high encomiums passed upon them by some of the writers of the last century. Dr. Lonsdale's conclusions are:—1. That as the vegetable world became more or less blighted, man in common with the higher class of animals suffered from causes not well understood, but apparently of an epidemic nature, which have deteriorated his condition, and made him the more ready victim to scurvy, fever, etc. 2. That Scurvy originates from an error of diet—the occupations, dwellings, etc., having little or no influence. 3. That a deficiency of potatoes constitutes the chief error of diet, whilst the absence of variety and deficient quantity of food hastened the development of scurvy. 4. That the use of milk lessened the liability to scurvy, but did not prevent its occurrence.

Dr. Shapter of Exeter had observed similar cases of ailment to those witnessed by Drs. Ritchie, Lonsdale, and others, previous to the outbreak of Scurvy in his neighbourhood. Amongst the earliest symptoms of the disease, he found the gums unusually pale and contracted; afterwards, they became red and swollen. He seems to have noticed pain in the loins more frequently than other writers. Fresh vegetables could not be had by the parties who suffered from Scurvy; whilst there was no deficiency of bread and meat. The absence of potatoes is allowed by Dr. S. to be the cause of scurvy; but as he views the disease as one of "depraved nutrition," he does not think the deficiency of vegetable food the sole cause,—cold, and other circumstances, being viewed by him as concurrent.

In Nottingham, Mr. Stiff noticed the disease among the poorer classes, who had suffered severely from deficient provisions, and where they had not made use of succulent vegetables. He traces the disease more particularly to the loss of the potatoe. In the Union of which Mr. S. is surgeon, potatoes were abandoned at Christmas, and Swedish turnips were used till March: then Indian meal and rice took their place; and, though the parties had milk-parridge daily for breakfast, and a fair allowance of meat and bread and soups, the disease appeared in six weeks after the abandonment of the fresh vegetables. Children at the breasts of scorbutic mothers were not affected; neither were any under five years of age liable to the disease. The old and edentulous subjects did not suffer in the gums, which confirms Fauvel's experience at the Salpêtrière. Mr. Stiff's treatment consisted in the substitution of cabbages for Indian meal, and the use of rhubarb puddings, lettuce, etc.; with imperial as a beverage, and citric acid as a medicine.

Dr. Laycock of York speaks of Scurvy as occurring in that city in those of the poorest class, who had little more than bread and tea, and no vegetables. His views of the distinction between Purpura and Scorbutus are by no means so clear as we could have wished; but in the treatment of Scurvy, and the recommendatory measures for preventing the disease, Dr. L. displays

much good sense. He attributes the disease to the want of fresh vegetables, especially the potatoe.

Dr. Bellingham has given a very clear narration of six of his cases—the symptoms of which fully coincide with those given in a preceding page. In reference to the etiology of the disease, he remarks, that none of his patients suffered from an absolute deficiency of food, but all agreed in not having used fresh vegetables from the period of the failure of the potatoe crop the year previously. He therefore attributes the appearance of the disease to the absence of the potatoe; and whilst it is clear that a diet of bread, with or without meat or broth, is incapable of preserving the body in health, and tends to develope Scurvy, it is shewn from long experience in Ireland, that a diet consisting solely of the potatoe is capable of affording sufficient nourishment, and of preserving the body in perfect health.

Dr. Curran of Dublin (whose death we so much deplore), entered more into the literature of Scurvy than any of his cotemporaries. His paper is well worthy of perusal. In his analysis of the symptoms, the following is deserving of notice:—"Ecchymoses appearing suddenly, preceded by pain, and the discoloured portions of the integument of a higher temperature than the healthy parts; epistaxis occurred in at least half of the cases; whilst hæmorrhage from the lungs and stomach was never seen; the joints were enlarged and fluctuating in some cases."

After refuting the various opinions as to salt, sea-air, etc., as causes of Scurvy, Dr. Curran notices Dr. Christison's views as to milk, and shows partly from the literature of the subject, and partly from his experience in Ireland, that milk is quite inefficacious as a remedy. Thus the patients in the North and South Union Hospitals of Dublin, for at least six months, had been using the following dietaries:—South Union, seven ounces of oatmeal in porridge, with half a pint of milk, for breakfast; eight ounces of bread, with half a pint of milk, for dinner;—under this regimen four cases occurred. The other seven attacked in the house had been on the diet of the infirm, including, *inter alia*, one pint and a half of milk daily. In the North Union the dietary was nearly the same. In respect to the supply of proteinaceous nutriment being wanting, Dr. Curran adduces similar examples to those furnished by Dr. Lonsdale where there was great abundance of animal food, and particularly mentions the case of a shop-keeper's wife, in Camden-street, Dublin, who had been using for three months previously beef-tea and bread and butter for breakfast; roast meat, broth, and bread, for dinner; and coffee, with bread and butter, in the evening; together with Guinness's porter, and wine. This case was most severe. He further remarks, that thousands, nay, millions of peasants in the centre and west of Ireland, have lived for years exclusively on potatoes with salt, or some similar condiment, and enjoying the luxury of milk only at rare and distant intervals, or *not at all* (as was satisfactorily ascertained in very many instances); yet Scurvy was unknown in Ireland until within a very recent period. Drs. Stokes, O'Ferrall, and others, bear similar testimony. Dr. Curran concludes, that "*neither misery, nor the want of milk, flesh, fish, farinacea, nor any combination of these, can be regarded as the cause of Scurvy making its appearance.*" Dr. C. believes in an "epidemic constitution" giving a tendency to the development of the disease, but that other predisposing causes are necessary to its actual outbreak; amongst these he mentions "humidity, changes of temperature, inactivity, and moral depression." A more searching inquiry into the history of the disease, and a better acquaintance with the observation of some of his contemporaries, would have shown him that many of these circumstances had been proved to exert no influence, whilst the fact which he himself related, that *in no single instance did green vegetables or potatoes form a part of the regular diet*, is all-important.

Having noticed the English, Scottish, and Irish writers on this interesting

subject, we request a little attention to what has been recorded by our American brethren. Scurvy appeared on board the United States' ship, "Raritan," and other vessels, employed in the blockade of Mexico in the summer of 1846. The recital of Dr. Foltz, as to the style of ships, their accommodation and internal arrangements, and the characters of the disease, reminds us greatly of the history of our own navy, when holds, decks, and hatches, were so objectionable in a sanitary point of view. Let it be said in justification of brother Jonathan, that all his vessels were not so faulty, though his dietary arrangements were far from what they should have been. However differently the men were placed as to the period of commission, or time of service before joining in the Mexican blockade (and the accommodation varied, to a certain extent, in every ship), yet all suffered alike from Scurvy, simply because there was one peculiar condition common to all,—namely, the want of vegetables. Dr. Foltz condemns the merchant whaling ships of the United States for their want of cleanliness, and the short periods allowed for refitting; and on board these he has seen Scurvy in its worst form; but it *always occurred in vessels where their universal antiscorbutic, fresh potatoes, had been exhausted for some time.*

We confess our great surprise, that ships fitted out for active service, and warfare, should have wanted fresh provisions, or nearly so,—as, in three hundred days, fresh meat was only served out nineteen times!—and only had a very limited supply of citric and tartaric acids, and lime-juice. And this to occur in the middle of the nineteenth century, in the hands of our knowing trans-Atlantic brethren! It is a fresh lesson to us from a quarter we did not expect; and we hope the Admiralty Lords at Somerset House will not lose sight of it. God forbid that our navies should again be called upon to obtain what are called "glorious victories." Let us rather hope that the good time is coming, when "nation shall not lift up sword against nation, neither shall they learn war any more." But in the present state of the world it is necessary to be always ready.

M. Fauvel's cases at the Salpêtrière need not detain us long, as they occurred in persons of very advanced years,—the youngest being 69, the eldest 80, years of age; and the author is silent on many points of interest. The peculiar colour of the skin, and the fact of edentulous subjects presenting little or no affection of the gums, have already claimed our attention. He found the saliva neutral, or alkaline, with the exception of one case, where it was acid. Much as we admire the talents, industry, and intelligence, of our French neighbours,—and gladly we award to them some of the highest honours in medicine,—we cannot help expressing our surprise and regret at the illogical and confused discussions which have recently taken place in the Academie de Médecine, on the subject of Scurvy. Nor can we award unqualified praise to the views on its etiology, promulgated by the distinguished writers in the *Dictionnaire de Médecine* and *Dictionnaire des Sciences Médicales.*

Having given a brief epitome of the labours of modern observers, citing only those points in their writings which betokened originality, or were deserving of interest in future inquiries, we ought now to proceed to a very difficult part of the inquiry,—namely, the relation of chemistry to the history of scurvy. Before doing so, however, it may be advisable to sum up the evidence already collected on the etiology of the disease, and then say a few words on the treatment. The means at our disposal for correcting the tendency, or preventing the occurrence, of Scurvy, will come more suitably under review at the close.

The circumstances attendant upon the late outbreak of Scurvy, bear every resemblance to those recorded from time to time by medical historians of this disease. The fanatical followers of Louis IX in his crusades, nearly six hundred years ago, who *voluntarily* abstained from meats, have their analogues in our time in the *compulsory* adoption of an insufficient diet by our lowest

class. Parallel instances might be drawn from the very opposite circumstances of men living on animal diet in large rations; *e. g.* the Germans in Hungary in 1720, and the railway excavators on the Caledonian railway in 1847. A careful survey of what has occurred within the last two years will shew that many circumstances formerly alleged as causes of Scurvy could have had little or no part in developing the disease. We allude more particularly to salt provisions, cold, moisture, bad air, moral depression, inactive habits. In reference to salt provisions little comment is necessary, inasmuch as their use was very limited indeed among every class of scorbutics in the late outbreak. A salt herring now and then, or a piece of bacon, generally embraced the whole amount of salt provisions amongst the artisans and their families. Many had no meat of any kind, salt or fresh, whilst the railway excavators, on the other hand, ate nothing but fresh mutton or beef as animal food. And, in the last century, Kramer and Lind give striking illustrations of the fact that Scurvy arises independently of salt provisions. Cold, long continued, predisposes the body to disease, and is calculated, like other depressing agents which interfere with vigorous and healthy action, to make the poor and ill-nourished more susceptible of the inroads of Scurvy; beyond this, cold cannot be recognised amongst the causes. The appearance of the disease between April and June from Cumberland to Cornwall, and the fact of people in warm, comfortable dwellings, in the larger towns, being affected, sufficiently discountenances the idea of attaching more importance to cold in this than in any other disease. And moisture can only be viewed in the same light. None of our authorities allude to the existence of undue moisture in their respective localities.

Impure air will doubtless influence those who are daily exposed to it, but neither history nor experience will warrant our attributing even the incipient stages of the malady to its baneful effects. Indeed it would be contrary to all sound reasoning to suppose such a thing; the workmen on the heathery moors, the rural cotters who inhale the "incense-breathing morn", becoming victims to Scurvy in a large degree, set aside such an hypothesis.

The same class of scorbutics whose habits were of the most active and laborious kind, may be fairly cited as showing that whatever may betide the tardy voyager in his distressed circumstances, or the young man inhumanly forced to join our naval expeditions, or the long incarcerated prisoner of our gaols and asylums, neither moral depression nor indolent habits are essential to the development of Scurvy; they can only be viewed as accessory circumstances, which never *per se* originate the disease.

It must not be argued that we are insensible or indifferent to the influences of foul air, cold, &c., on the healthful manifestation of the economy, because we discard them as bearing but a subordinate part in the generation of scurvy. We are too fully impressed with the fact, derived from personal experience of the disease, that all debilitating influences render the body a more ready prey to morbid action, *e. g.*, fever, scurvy, etc.[1] Our minds, however, should not be led away by circumstances of an accidental character from the constant and essential antecedents of the disease.

What is the essential antecedent of Scurvy? In our preliminary remarks we gave a rapid sketch of the districts in which the late outbreak of Scurvy manifested itself, embracing every variety of climate in this island, and affecting every class of society. Now that we have epitomized the facts contained in the memoirs before us, we are led to perceive that however

[1] Thus, in 1823, in the Millbank Penitentiary, the effects of inactivity and confinement were strongly marked in the increased liability to the disease observing a constant ratio to the period of confinement. The same occurred in the Perth prison, as far as the data will allow us to judge. Were it called for, other instances might be cited. It is well known that typhus, and other forms of fever, are often combined with Scurvy, and that these febrile affections were increased as Scurvy became more prevalent.

differently scorbutic patients may have been situated as to locality, employment, and food, there was one condition common to all of them, rich or poor, —the being deprived for a longer or shorter period of fresh vegetables, and particularly the potatoe. Hence, we are justified in stating that a deficiency or absolute want of *fresh succulent vegetable* food is the invariable or essential antecedent of Scurvy. This is but a repetition of the views entertained by the best authorities in the last century; and fully bears out the correctness of Dr. Budd's opinion in his very able article in the *Library of Medicine*. We have made no exception in favour of the milk theory of Dr. Christison,—a theory by no means free from ambiguities which the author himself has not been able to clear up; besides, the absence of potatoes, and inadequate dietary, in the Perth prison, were sufficiently cogent reasons for the outbreak of Scurvy, without any appeal being made to the withdrawal of milk. The evidence adduced by Drs. Curran and Lonsdale has been considered by previous commentators to have decided this question.

Chemistry.—If one disease more than another can be considered as a "blood disease," it certainly is Scurvy; hence the repeated attempts that have been made since the science of chemistry was brought to bear upon pathological medicine, to unravel the true condition of scorbutic blood. Alchemy itself, when directed to a speciality, has seldom assumed more Protean doctrines than the opinions, based on the legitimate chemistry of the last and present century, which have been launched forth from time to time on the nature of the blood in Scurvy. From the times of Boerhaave, Hoffman, and Willis, who dealt in oils, sulphur, salines, and other tangible substances, as characterising scorbutic blood,—to those of Andral and Becquerel, living and well-credited authorities, who speak of their thousandth parts, or even fractional divisions of these, as modifying the agency of the vital fluid,—what a host of discordances do we meet with! The blood has been found thick and thin, coagulable and non-coagulable, oxygenated and carbonated, alkaline and neutral,—its colour red, black, or slightly *greenish*. But we must not comment further upon the chameleon character of scorbutic blood. It is not a little curious, that those who had most abundant opportunities of observing the ordinary conditions of the blood,—*e. g.*, Trotter, Lind, and Rouppe,—failed to mark, or at least to agree, as to the apparently simple fact of its coagulability. The general opinion (Rouppe was an exception), no doubt, was that the blood was more or less broken up or dissolved, or thin and deficient in fibrine: hence its tendency to escape from the vessels, and to constitute the various hæmorrhages. As often happens in medicine, hypotheses were advanced, subservient, of course, to an explanation of the prevailing symptoms; and men found a difficulty in recording circumstances which tended to militate against their preconceived views, or in any way to interfere with a beautifully developed theory. Let us briefly consider what has been done within our time.

Mr. Busk, about nine years ago, made three analyses of the blood of scorbutic patients, and found the quantity of fibrine above its natural standard.[1] Shortly afterwards, and in ignorance of Busk's labours, Andral found a deficiency of fibrine (1.6 in 1000 parts of blood); and on his two analyses he framed a very ingenious theory of hæmorrhages generally. Such is the influence of a name in blinding our judgment, that a theory having no greater basis than two observations, but bearing the stamp of Andral, was immediately accepted, and somewhat extolled for its beauty and its applications. Andral's countrymen exposed the incorrectness of his views; and he, philosopher-like, acknowledged his errors, and the danger of hasty generalisation from so limited a number of observations. Chatin and Bouvier seem to

[1] Library of Medicine, vol. v, p. 90, art. Scurvy, by Dr. Budd.

have laboured earnestly on this division of the inquiry; and, whilst they freely admit the difficulty of estimating the exact proportion of fibrine, they are satisfied that there is considerable diminution in the force of its cohesion,—so marked, indeed, that they found it difficult to isolate it completely from the red globules. This is an important fact, and, if corroborated, will serve to explain many circumstances in the pathological history of Scurvy.

The specific gravity of the blood (defibrinised) is variously estimated, but generally found slightly below the average; the same may be said of the specific gravity of the serum. Busk, Fauvel, and Garrod, met with buffed and cupped blood. As already stated, Busk found the fibrine increased, thus his three cases gave 6.5, 4.5, and 5.9 parts in the 1000—the blood of a healthy man subjected to the same analysis yielded 3.3 parts in the 1000. Chatin and Bouvier's analysis indicated 4 parts in the 1000 in the amount of fibrine or scorbutic blood, and Frick's single case made it 4.204. The only marked deviation from the general rule is Dr. Ritchie's case, where only 1.106 of fibrine in the 1000 was found by Dr. R. D. Thomson.

A great deal has been said about the red particles in this disease by the chemist and micrographer; of the latter class we may mention that Chatin and Bouvier observed no change in their form, whilst Ritchie considered the corpuscles irregular and flattened. The chemist generally reports the proportion of red particles to be diminished,—the numbers occasionally ranging within the limits of healthy blood. The lowest amount was a case of Andral's, only 44.4 per 1000—the highest (Frick's analysis) gave 117.078. Considering the important part which these bodies play in the animal economy, as shown by modern physiology, it is only reasonable to suppose that a more searching inquiry than has hitherto been made into their composition when freed from the fibrine, will lead to promising results.

We pass over the albumen of the blood as affording no indication. The same may be said of the salts, the chlorides, phosphates, and iron, about which chemists are by no means agreed.

The quantity of water was found augmented in all the analyses, thus confirming the views of the early writers.

We need hardly say how unsatisfactory is our knowledge of the characters or condition of the blood of scorbutic patients, and how much requires to be done before pathology can be safely aided by the light of chemistry, either in framing a theory of the disease, or in the advocacy of a plan of treatment. We know that many, like ourselves, felt disappointed at the *status quo* of our knowledge of scorbutic blood, after the subsidence of the disease in 1847, more particularly as large expectations had been formed from the advanced state of organic chemistry; and it is somewhat humiliating to have to admit in our day the justness of a conclusion which Trotter, of a bye-gone age, arrived at, namely, that "the proximate cause of Scurvy is still to be sought for from some peculiar state of the blood."

The rarity of Scurvy, and the small mortality of those affected, the difficulty attendant organic analyses, and the little leisure afforded to the great bulk of practising physicians for chemical enquiries, may be fairly pleaded in the way of atonement for the small advance we have made in the chemistry of the disease. But the same apology can hardly be obtained for the chemists *ex professo*, who adopting different modes of analysis, are hitherto undecided as to the exact character or composition of healthy blood itself. Without some healthy basis or standard for our guide, how are we to detect the constitutional deviations and particularly morbid changes to which the circulating fluid is liable. Let this first great step be accomplished, then we should hope that further inquiries into the chemical history of scorbutic blood would determine:—1. The relative proportion of the ingredients in the blood. 2. The chemical composition or properties of the ingredients which deviate from the normal standard; and 3. The physical condition of the

blood consequent upon the foregoing alterations in quantity or abnormal composition.

Having too great faith in the progressive philosophy of the age to suppose that Dutrochet and Matteucci have laboured in vain, we are free to anticipate that the physical condition of the blood will be more thoroughly examined—it being sufficiently obvious, from the fibrinous and sanguineous exudations in different regions of the body, that the balance between the circulating medium and the animal tissue is greatly modified in Scurvy. The diminished "plasticity" of the fibrine, and probable increase in the solubility of the albumen, as noted by Chatin and Bouvier, independent of other data, evince that the blood rather than the tissues is primarily affected.[1]

We have endeavoured to ascertain how far the physician has been aided by chemists, in framing a theory of the disease; let us now add a few words on the information they have brought to bear on the treatment and prevention of Scurvy.

Dr. Christison, in reasoning upon his observations at the Perth prison, thought it probable, that a saccharo-farinaceous and fatty diet could not be continued for a long time, however large the quantity of gluten in it, unless combined with articles containing animal casein or vegetable albumen; and to this latter principle, rather than the small proportion of salts with vegetable acids, he attributes the anti-scorbutic properties of succulent vegetables. The experience of Kramer, Trotter, etc., might be cited against these views of Christison; but his contemporaries, who were cognizant of meat and farinacea being abundantly supplied, satisfactorily prove their untenability, seeing that Scurvy has arisen when one or both were plentiful. And the fact of citric acid, without a drop of milk, curing the disease, is a sufficient answer to his theory of the anti-scorbutic qualities of fresh vegetables.

Drs. Aldridge and Garrod take a different ground. In scorbutic blood they see a deficiency of sulphur, phosphorus, and the alkalies which enter into the normal composition of blood, and formation of the organic tissues. Dr. Aldridge calculates, that men of twelve stone weight throw off 24 grains of sulphur, and about 100 grains of potash and soda per diem; and that wheaten flour and peas, in sufficient quantity to meet the waste of the proteine elements, are insufficient to meet the waste of sulphur and alkalies; in short, that the deficiency of mineral ingredients in flesh and seeds is the cause of Scurvy. He adds, that the herbaceous parts of vegetables which cannot supply nitrogen in sufficient quantity, contain the minerals in abundance, but the potato contains in bulk, not too considerable, both organic and inorganic principles—all the necessary elements for the supply of waste. Dr. Garrod takes potash alone under his patronage, and gives the analysis of bread, flour, potatoes, mutton, etc., determining the amount of potash in each, and applies this analysis to dietaries. Thus, in the Crediton workhouse, he found the weekly supply of potash, under the ordinary diet, to be 186 grains of potash for the men, and 181 grains for the women; but when rice took the place of potatoes, the amount of potash was 51 and 46 grains respectively. He states, that all substances classed as anti-scorbutics contain a large quantity of potash, and instances fruit, potatoes, milk, meat, pickles, etc.; that in Scurvy, the blood is deficient in potash, and that scorbutic patients recover when potash is added to their food, the other constituents remaining as before, both in quantity and quality, and without the use of succulent vegetables or milk. It would appear that potatoes contain a larger proportion of potash than any other anti-scorbutic, and that when boiled (not too much, and unpeeled) the proportion of potash is greatest. His single analysis of scorbutic blood amounts to little, but his statement,

[1] Injections of the vascular system after death, in cases where sanguineous exudations had been manifested during life, show that there is no want of power in the smaller vessels, as no portion of the injection escaped from them.

that in several cases of Scurvy his treatment consisted in the daily administration of a few grains (12 to 20) of some salt of potash, mixed with syrup and water, and where vegetables, milk, and malt liquors were strictly prohibited, and the patients rapidly recovered, claims our earnest attention. The only salt of potash that has had much trial in the treatment of scurvy is the nitrate; and some few of our emigrant and convict ships testify to its value to a certain extent, but when compared with lemon-juice, or citric acid, the nitrate of potash, it would seem, from evidence lately adduced by our contemporary the *British and Foreign Medico-Chirurgical Review*, from the office of Sir W. Burnett, occupies but a secondary position. Dr. Garrod's theory is ingenious and well-sustained, excepting in the amount of practical evidence as to the utility of potash. This can only be decided satisfactorily by an appeal to extensive data, and by instituting a series of comparative experiments as to the salt of potash and the well-approved old fashioned remedies —lemon-juice, etc. If Dr. Garrod's view be correct, John Bull might, by by carrying with him a few ounces of potash in his visits to his antipodal friends, or in his pursuit of a North-west passage, bid defiance to Scurvy.

Dr. A. Anderson, of Glasgow, endeavoured to reconcile the differences of opinion prevailing amongst the Scottish writers. He states, that food appropriate to man must consist of three parts,—the nitrogenous, to nourish; the non-nitrogenous, to produce the extra heat required; and a third element, to aid in the assimilation of these. This element, he believes, is furnished by the various juices, more or less acid, in vegetables and fruit. He compares the efficacy of these juices, in Scurvy, to the effect of iron in anæmia. He asks, "Why is there sugar in milk?" and states that the lactine is converted into lactic acid; and that, in the infant, this stands in the place of vegetable food in the way of preventing Scurvy.

Treatment.—How instructive history is, when read aright; whether it pertain to men or manners, physic, or philosophy! In the present day it is apt to be thrown upon musty shelves, and forgotten; and we are busy coining what we term new facts, and bothering our brains about discoveries, which our forefathers had either fully understood, or fairly refuted, hundreds of years ago. Let us dust off the cobwebs of some of our old friends in their plain leather suits, and ask their advice on the treatment of Scurvy. Here is Rousseus, who wrote within an ace of three hundred years ago, telling us that sailors cured themselves by the use of oranges. Thank thee, Rousseus, for that great fact! Albertus wrote well thirty years later; and Sir R. Hawkins, in 1593, fully proved lemon-juice. Similar facts were elicited from time to time, but, alas for truth!—particularly a medical truth, when lay commissioners and Admiralty lords are to sit in judgment upon it. Two hundred years elapsed between Hawkins' experience of lemon-juice, and its introduction as part of the regular diet of our navy! Kramer's pithy view of the treatment may be quoted a thousand times. It is above praise. He says: "Scurvy is the most loathsome disease in nature, for there is no cure for it in your medicine chest,—no, nor in the best furnished apothecary's shop. Pharmacy gives no relief; surgery as little. Beware of bleeding; shun mercury as poison. You may rub the gums; you may grease the rigid tendons in the ham, to little purpose. But if you can get green vegetables; if you can prepare a sufficient quantity of fresh, noble, antiscorbutic juices; if you have oranges, lemons, or citrons; or their pulp and juice preserved with sugar, in casks, so that you can make lemonade, or rather give to the quantity of three or four ounces of their juice, in whey,—you will, without other assistance, cure this dreadful evil." It seems very uncalled for to add one word to this graphic advice; but as palliatives of the mind are necessary along with local soothings, it is well occasionally to wash the gums with the tincture of myrrh, or bark, or rhatany, or solutions of chlorides of lime and soda, and to use warm fomentations, or anodyne lini-

ments, to the stiff, painful joints. Nor must it be overlooked, that, in some cases, they seem serviceable. The patient with embarrassed breathing requires a stimulus of some kind (and generous port wine is the best), before he ventures to rise. We have experienced, with Dr. Budd, the bitterness of neglecting Lind's advice on this subject. Many die of syncope in this state. Ulcers are washed with lotions of citric acid or lime juice.

Our authors, as already seen, improved the diet of their patients, varying its character as much as possible, and making it nutritious in addition to their exactions from the materia medica. Milk, beef-tea, and other soups, are required till the gums permit of more solid food. The respective merits of citric acid and nitrate of potash, have been much canvassed; and though opinion is justly in favour of the citric acid, we hope the surgeons of our emigrant ships, etc., are collecting information by which this question may be decided to the satisfaction of all parties.

Prophylactic Measures.—What might be said regarding the prevention of the disease, has been greatly anticipated in the discussion of the treatment. Prevention consists in a due supply of fresh succulent vegetables. Notwithstanding the potato-commission for Ireland, a knowledge of the class of plants that could be easily cultivated, kept through winter, and sold at a reasonable price to the poor, is still a desideratum. In the absence of the potato,[1] some of the cruciferæ seem the most adapted, as many members of this family might be cultivated in early spring, in certain counties; and we hope that, ere long, we shall be able to do otherwise than trust entirely to the potato.[2] Had we possessed such knowledge (as is still required), in the autumn of 1846, the pages of Irish history would not have been darkened by the records of such sacrifices as the noble-minded and illustrious Curran and his numerous associates,—men who, without money, and without price, exposed themselves day and night, in the hovels of the sick and dying, to dangers, which no murderous battle-field could rival. Noble sons of humanity! your rewards were not of this world. No pageantry and pomp attended your funeral rites; no state pensions, no state honours, await your widows and orphans. But written in Heaven, on the great scroll of love and charity, in all lustre and glory, your names stand imperishable and immortal!

SURGERY.

EXCISION OF THE HEAD OF THE FEMUR.—OPINIONS OF MESSRS. SYME, FERGUSSON, AND H. SMITH.

A difference of opinion exists between Mr. Syme of Edinburgh, and Mr. Fergusson of London, as to this operation. Four years since, Mr. Fergusson

[1] The potato has had its share of abuse from chemists. The Liebig school saw little besides carbon and water in the potato, and that it could not make bone or muscle, whilst peas and beans did so admirably; and so it became a theory, that an ounce of beans or peas in point of nutrition, exceeded in point of value a pound of potatoes, and that these latter, should be discarded as unwholesome. The learned professor of Utrecht (Med. Gazette, Sep. 1848) also issued his manifesto against the "Irishman's friend,"—declaring the potato to be the cause of the moral and physical degeneration of the nation which made use of it. He apparently had heard of Ireland, and qualified his views by admitting that life might be sustained by the potato, but it was "not an elastic or healthy life." Now we have no hesitation in backing an Irishman's elasticity against that of any Swiss or Dutchman.

[2] One or more of the following list might be had almost throughout the whole winter—some of them for the gathering. Cabbages, turnips, or their tops, sorrel, water-cresses, horse-radish, rhubarb, nettles, fir-tops. All classes should be encouraged to make use of fruits in their season, *e. g.* apples, etc., which, in some districts, are cheap, and can be had in fair abundance till Christmas.

revived the operation, which had been performed with success, about thirty years previously, by Mr. Anthony White. Mr. Fergusson's case was entirely successful; and, in consequence of this, he has recommended the operation for certain cases. He and other surgeons have since resorted to the operation with more or less satisfactory results. Mr. Syme, however (perhaps from an imperfect knowledge of the facts), has entered a strong protest against the proceeding; and argues that it should never be put in force. He says, in a clinical lecture reported in the *Medical Times* for December 30, 1848: "If caries supervene, no human means can remove the disease. Lately, in some of the London hospitals, it has been attempted to cure the disease by removing the carious head of the femur; but this is improper, as caries of the joint never exists without the bones of the pelvis being equally involved. I regret that these operations should have been attempted, as they tend to throw discredit on the excision of other joints,—such as the elbow, where the practice is eminently useful, and which has now become an established operation in surgery. If the disease admits of recovery, excision of the head of the thigh-bone is superfluous and useless. If it does not admit of recovery, cutting out the head of the thigh-bone can only hasten the fatal termination. If the patient recovers after the head of the bone has been cut out, it is a distinct evidence of the uselessness of having excised it. If caries is curable, why amputate the head of the bone? If incurable, why remove the head of the bone, and, at the same time, leave behind carious portions in the acetabulum, which cannot be removed? Common sense, and their unsuccesstul results, will, no doubt, ultimately show the impropriety of such operations."

These remarks of Mr. Syme are commented upon by Mr. Henry Smith, in the *Lancet* for January 6, 1849. This gentleman was formerly house-surgeon to King's College Hospital, and has had the opportunity of witnessing and assisting in the operations of excision of the head of the femur, performed by Mr. Fergusson. He has specially studied this subject, and is the author of an essay on the operation. He considers that Mr. Syme's main objection to the proceeding does not hold good; that his assertion that "caries of the joint *never* exists without the bones of the pelvis being equally involved," is neither in accordance with facts ascertained by the pathologist, nor by post-mortem specimens of the disease; and that it is rendered invalid by the results of the operation itself, which has proved successful both in this country and abroad.

The circumstance of disease implicating the pelvis, in a great number of instances, is a serious objection to the operation; but yet the existence of a moderate amount of disease in the acetabulum should not, Mr. Smith alleges, prove a bar to the performance of the operation, where there is no other contra-indication, as it may be got at and removed by proper instruments, "in the same manner as carious portions of the scapula may be removed in the operation of excision of the head of the humerus."

With respect to Mr. Syme's other objections, Mr. Smith states, that it is not in those cases which admit of cure, that the surgeon would perform the operation; but, that it is in cases where the affection has gone so far, that there is no hope of saving the patient by any other means, and there is good reason to suppose that the head of the bone is alone, or chiefly, diseased, the surgeon is justified in resorting to it.

In the *Lancet* of January 21, are reported some clinical remarks, delivered after an operation, performed on the 13th January 1849, by Professor Fergusson. His views, as there expressed, are similar to those of Mr. Smith, and entirely opposed to those of Mr. Syme. He strongly recommends excision of the head of the femur in certain instances; and says that the disease involving the acetabulum, to a certain extent, is not an absolute objection to the operation, as this diseased portion may be removed. He points out that, in some instances, when the cotyloid cavity has been origi-

nally attacked, the disease stops, and a deposit of new bone takes place, filling up the cavity; as was found to be the case in the patient he had just operated on: whilst, if the head of the thigh-bone be extensively carious, there is little probability of its separating; therefore the surgeon is called upon to do the operation.

Thus it appears that two of our most eminent surgeons promulgate opposite opinions respecting a most important point of practice. Mr. Syme, we think, is premature in his summary condemnation of the operation. It is true that there are great difficulties connected with the selection of cases; but it is equally true, from the results obtained by Mr. Fergusson and others, that it may, in certain instances of hip-disease, be undertaken with great propriety; that life may be saved, and a limb, more or less useful, preserved.

COLLODION: ITS USES IN SURGERY.

The Employment of Collodion in Surgery promises to be not the least important of the recent improvements in the practice of the healing art. Referring our readers to p. 206 for an account of the history, mode of preparation, and properties, of this substance, we here give a summary of what has been written regarding its various applications in Surgery.

1. In wounds, ulcers, and other external lesions, it has been employed with great success. In the *American Journal of the Medical Sciences* for April 1848, its discoverer, Mr. Maynard, of Boston, states that Dr. Whitney had employed it in the *removal of a wen from the head*. To obviate the occurrence of erysipelas, from the presence of sutures, Dr. Whitney shaved the hair from the scalp, and, by means of the cotton solution, glued some pieces of sheep-skin on each flap, at a short distance from the wound. These straps were then brought together, and retained in their position by sutures. The wound healed favourably; and pain, and the usual accidents arising from the presence and removal of sutures, were entirely obviated. Mr. Maynard also mentions that Dr. Comstock, of Wrenthain, U.S., "has recently employed this liquid as a dressing, in a case of *extensive laceration of the perinæum*, with a success that, he thinks, never attended any other mode of management. The dressings remained firmly attached, and solid, during the process of healing, notwithstanding they were for a time almost constantly covered by urine and mucus, and subject to being displaced by the motions of the patient." *The Monthly Journal of Medical Science* for July 1848, contains a report of a paper "On Solutions of Gun-cotton, Gutta-percha, and Caoutchouc, as Dressing for Wounds," read by Dr. *Struthers* before the Medico-Chirurgical Society of Edinburgh. He had employed Collodion, with perfect success, in some cases of *painful fissure at the base of the nipple*. Having brought together the edges of the wounds, he applied the Collodion, which formed a protection against all irritating influences, and permitted the child to suck, without causing, as it previously did, pain to the mother, or disturbing the dressing. The healing process took place rapidly. Mr. Erasmus Wilson (*Lancet*, Nov. 18, 1848, p. 553) says, that in two instances of *chapped nipples*, in which he used it, it seemed to "work a charm upon the painful skin. The gaping cracks were instantly drawn together, and almost obliterated, by the contracting power of the remedy; and were effectually shielded from the influence of moisture, and the pressure of the gums of the infant, in consequence of the rapid evaporation of the ether in an instant of time." Dr. Simpson also mentions, in the above-cited communication, that, in a case where Professor Miller had *removed a portion of necrosed bone* from the lower jaw, he (Dr. S.) dressed the wound with Collodion, with the effect of retaining its edges in apposition. Mr. Brown made a communication to the Westminster Medical Society, Dec. 3, 1848, stating that he had used Collodion, with advantage, in cases of sore nipple. (*Lancet*, Dec. 23, 1848.) The *British-American Journal*, for August 1848,

states that Dr. PAYNE, dentist, of Montreal, appears to have suggested the use of the Collodion in *burns*; and Dr. CRAWFORD, of the same city, employed it in the case of a young gentleman who met with a severe burn of the face and hands. The burn was covered with a thin glazing, which completely excluded the air; and the pain almost immediately subsided. Its utility in burns has been confirmed by other practitioners. In the *Dublin Medical Press* for October 4, 1848, Dr. T. R. MITCHELL gives the result of his experience of the use of Collodion in *Ulceration of the Os and Cervix Uteri*. He considers it greatly superior to nitrate of silver for forming an artificial covering to the ulcer, and permitting the healing process to go on underneath. The ulcerated surface being wiped clean and dry with soft lint, the solution is rapidly applied, with a camel's-hair pencil, and allowed to dry; a second, third, and fourth, coating, if necessary, can then be applied. The first application is attended with a slight burning sensation, caused by the ether, followed by a sensation of coldness, from its evaporation. The application requires to be renewed at the end of forty-eight hours, as the mucus collects beneath the dressing, and raises it. In cases of simple abrasion, three dressings have proved sufficient; in more obstinate cases, he has employed caustics first, and then covered the eschar with Collodion; thus curing extensive ulcers in half the time required by other methods. He has also found it beneficial in cases of *vaginitis* without ulceration. In the *Annales de Thérapeutique* for September and October 1848, p. 241, it is stated, that M. JOBERT, of the Hôpital St. Louis, and M. ROBERT, of the Hôpital Beaujon, have successfully employed it as a *dressing for wounds made in operations*. Dr. YVONNEAU, junr., of Blois, communicated to the *Union Médicale* for November 18, 1848, the particulars of a case in which he had employed Collodion, with an amount of success exceeding his expectations. The patient, a child of five years old, had *extensive fistulous ulceration of the right cheek*, permitting the escape of saliva, as well as of food and drink; the cheek had also contracted very firm adhesions with the gums of both jaws. After an ineffectual attempt to remedy the mischief, by a common mode of operation and dressing, he determined, as a last resource, to try the effect of Collodion. Having obtained anæsthesia by means of chloroform, he carefully brought together the edges of the wound, and retained them in their position by long and firmly agglutinated bandages, passing completely over the chin, upper lip, and *ala nasi*. Over the whole, he applied a layer of Collodion; which, besides its adhesive property, completely protected the dressings from the saliva and food, which had been the main causes of the failure of the former operation. At the end of three days, a slight displacement of the dressings rendered readjustment necessary, when the edges of the wound were found united to a considerable extent. On the eighth day, the dressings were again removed; when, in place of the enormous fistulous opening, only a small cicatrix was found, which at length almost disappeared. The Collodion, in this case, appears to have been of service, not only in preventing the dressings from imbibing fluid from without, but also by preventing the escape of saliva, externally, through the wound. The healing process does not seem to have been retarded by its presence in the interior. M. Yvonneau is of opinion that Collodion might be advantageously used in the operation for *hare-lip*. He also states that he employed it in a case of *wound of the first joint of the thumb*, with disease of the ends of the bones, produced by the bite of an ass. Having performed resection of the diseased ends of the bones, he retained the thumb in an immoveable position, by means of linen bandages soaked in Collodion. The result, however, he was unable to state, as the patient was still under treatment at the time of his making the communication. In the *Lancet* for December 9, 1848, we find that Mr. TUCKER, of Berners-street, had been successful in restraining severe *hæmorrhage from leech-bites* by means of compresses of lint dipped in Collodion, and applied to the bleeding orifices. Where oozing appeared, the solution was applied by

means of a camel-hair pencil; it was also applied freely round the edges. In the same journal, for January 6, 1849, Mr. R. T. Wylde recommends it in the hæmorrhage from leech-bites. Dr. W. H. Ranking, of Norwich (*Lancet*, January 13, 1849), says that he has caused it to be applied, with much advantage, to the *incisions after cupping*. Dr. Muirhead, of Glasgow, (*Lancet*, January 27,) says that he has seen great benefit arise from its use in *bed-sores*.

2. Cutaneous Diseases.—Mr. Erasmus Wilson has employed Collodion with great benefit in these affections. In the *Lancet* of November 18, 1848, he describes the case of a young lady, who "had been suffering for many years with *scrofulous ulceration of the skin*, in various parts of the body. She had been under my care", he says, "for several months, and the sores were much improved; but they were nevertheless very far from being healed. The diseased skin had the appearance of being worm-eaten, its hollows were filled with pus, which burrowed under the surface, and it was moreover thickened and congested. By the constitutional treatment which I had pursued, I had, to a great measure, corrected the pyogenic tendency of her system; but I felt the want of a local remedy that would serve as an impermeable covering to the surface—in fact, take the place of the lost epidermis, and act the part of an artificial scarf-skin. I had tried vulcanized caoutchouc spread with adhesive plaster, gutta percha, nitrate of silver, astringent solutions, ointments, and pressure by bandages, in vain—the remedy was not as yet found." Having received some Collodion from Messrs. Bell of Oxford-street, he determined on applying it, and "on the next visit of the patient, removed the dressings from the sores, and pencilled them over with the new agent, which covered the surface with a powerfully adhesive film, of about the thickness of gold-beaters' skin, and effectually represented the lost scarf-skin. A piece of dry, soft linen was the only additional covering required; and she left me, much delighted at the abandonment of the local applications and bandages. This young lady has since continued to apply the Collodion herself, night and morning, until the present time, when the sores are nearly well, and the congestion and scrofulous thickening of the skin almost gone." Mr. Wilson says further, "The diseases of the skin in which I have hitherto used the Collodion with advantage are, *chronic erythema of the face; intertrigo; chapped nipples*, and *chapped hands; herpes labialis, preputialis*, and *zoster; lichen agrius; lupus non exedens* and *exedens; acne vulgaris;* and several *affections of the sebiparous organs*. In chronic erythema of the face, its contracting power was most usefully evinced, as it was also in lupus non exedens and acne. In a troublesome case of chapped hands and fingers, resulting from chronic lichen agrius, the Collodion acted, not merely as a protective covering, but also promoted the healing of the cracks more quickly than the remedies I have been in the habit of employing. In four instances, it immediately put a stop to herpes labialis, and in a very severe attack, it showed itself to be a powerful and useful remedy. Small superficial ulcerations of the corona glandis and prepuce, caused by excoriation, were cured by a single application; and in a gentleman very susceptible of excoriation, it acted as a prophylactic. From the success of the latter trial, I am induced to think that it might be usefully employed as a prophylactic, in cases of exposure to syphilitic contagion." In his paper in the *Lancet*, already quoted, Dr. W. H. Ranking says: "I have not had an opportunity of trying this preparation in *variola*, but I would suggest it as a valuable application to the face, etc., for the purpose of excluding air, and thus preventing pitting. The same effect is produced by tincture of iodine, a solution of nitrate of silver, Vigo's plaster, mercurial ointment, etc., but it strikes me that Collodion offers a peculiarly ready mode of obviating deformity. I need not refer to the fact, that the development and maturation of the variolous corpuscle is in some way connected with the contact of air, as it is always more decidedly and abundantly formed on the face, hands, etc., and is more sparingly de-

veloped on the hairy scalp of the adult, while on the scalp of early infancy it makes the same progress as on the face.

3. As a Stopping for Teeth.—In the *Lancet* for 30th December, 1848, p. 729, Mr. J. Robinson, dentist, Gower-street, states, that he has "frequently applied Collodion in severe cases of *tooth-ache*, arising from exposure of the nerve, with perfect success, when no persuasion could induce the patient to submit to extraction." The method which he adopts is, to let the patient first wash the mouth with warm water, in which a few grains of bicarbonate of soda have been dissolved. He then removes from the cavity any foreign substance likely to cause irritation. After drying the cavity, he drops from a point the Collodion, to which have been added a few grains of morphia, after which he fills the cavity with asbestos, and saturates with Collodion. Lastly, over this, he places a pledget of bibulous paper. In a few seconds, the whole becomes solidified, and forms an excellent non-conductor of heat and cold to the exposed nerve. By occasionally renewing this, he has been enabled to effect a more durable stopping with gold leaf.

AMPUTATION OF ULCERATING STUMPS, BY MR. SYME.

——, aged 18, an engineer, two years and a half ago, had primary amputation performed about the middle of his left leg, by the flap operation. The stump never healed properly; and, when brought to the hospital, the covering for the bones was found insufficient, ulceration having taken place. It was very painful, and the extremities of the tibia and fibula felt as if enlarged. On the 10th January (in Edinburgh Royal Infirmary), amputation was performed, by bringing the parts into nearly the same state as they would have been, had the original amputation been made by a circular incision, about two inches and a half higher up the leg. Sutures were introduced, but not tied, in order to prevent the necessity of undoing the stump, as in these cases of secondary amputation, the risk of the oozing of blood from innumerable small vessels is found to be very great. In this case, the propriety of this practice was proved, as in the evening a large clot of blood had formed in the wound, which, being removed, the parts were finally brought together, and will, no doubt heal perfectly; as has been the case with the two stumps operated upon by Mr. Syme on the 22nd December, which now are both quite well.—[From *Medical Times*, 20th January, 1849.]

CONTRACTION CAUSED BY CICATRICES SUCCESSFULLY TREATED BY EXCISION OF THE TELA INODULARIS.

Although surgeons are well acquainted with signal cures of the great deformities resulting from contraction of the cicatrices of burns, etc., which are from time to time effected by the ablation of the accidental or inodular tissue,[1] yet the two following cases seem worthy of transference to our pages. The long continuance of pain, after the operation, appears to be one of the greatest obstacles in the way of its performance. The following cases occurred in the practice of M. Paul Guersant, in the Hôpital des Enfans Malades of Paris, and are reported in the *Journal de Médecine et de Chirurgie*, Jan. 1849, p. 25.

Case I.—A lad, aged 14, was, when one year old, burned in the anterior and inferior part of the fore-arm. The result was rigid flexion of the hand, at a right angle with the fore-arm. The accidental tissue causing this deformity had been divided transversely, at Brussels, three years ago: but M. Guersant resolved to cut out the entire cicatrix; and this operation he

[1] To this tissue, Delpech of Montpellier gives the name of "tela inodularis", or "tissu inodulaire."

performed on the 3rd August 1848. The movements of the fingers were free, and the band of cicatrix was immoveable. This band was one *décimètre* (about four inches) long, and two *centimètres* (about ¾ of an inch) in breadth, and both the radial and ulnar arteries were external to it. The patient having been subjected to the influence of chloroform, an interosseous knife (*couteau interosseux*) was thrust under the cicatrix, and carried upwards and downwards, so as to remove a piece measuring at least twelve *centimètres* (about five inches). The edges of the wound were pared transversely, and some partial bands of cicatrix dissected out. There was no hæmorrhage. The wound was dressed with compresses saturated in cold water. An oat-chaff pillow was laid on the dorsal aspect of the hand and fore-arm, and on this pillow was placed a splint: the fore-arm and hand were then bound down to this. For the first three days, he suffered intense pain, notwithstanding the continued irrigation with cold water which had been kept up. On the 10th, the hand was quite straight, and the result of the operation in all respects seemed satisfactory. On the fourteenth day, the acuteness of the pain having abated, the irrigation began to be gradually discontinued; and as the wound looked a little grey, and suppurated profusely, the cold water was replaced by lemon juice and an aqueous solution of chlorine. On the 15th, 16th, and 17th, the same treatment was continued. The granulations increased: there was no inflammation of the sheath of the tendons, although the operation had left to the tendons only a very scanty covering of cellular tissue. On the 30th, as the granulations looked grey, they were touched with nitrate of silver. On the 14th September, matters are reported as going on favourably. On the 5th October, strips of diachylon were applied: and on the 19th, the wound was not more than one centimètre broad, and six centimètres (about 2¼ inches) long. On the 20th November, he left the hospital, with the wound nearly closed, and the hand in its right position. To prevent a fresh contraction, extension was recommended to be continued for some time; and to obviate the risk of a stiff joint from prolonged extension, he was advised at intervals to move the joint.

Case II.—A girl, aged four years, as the result of a burn or wound of the hand, had severe flexion of the middle finger of the left hand. Conceiving that there was no anchylosis, M. Guersant removed three centimètres (rather more than an inch) of the cicatrix, going down almost to the sheath of the flexor. The finger was then straitened, and kept in place, by means of a small splint applied to its posterior aspect, and appropriate bandages extending over all the fingers and carpus, and leaving only the thumb unconfined, and the wound free. Irrigation was also practised in this case. On the 17th of August,—that is, seven days after the operation,—there was no fever. Three days after the operation, the cold-water irrigation began to be gradually discontinued, and simple dressings used in place of it. The appearance of some pus, apparently coming from the sheath of the tendons, caused the use of poultices, and fomentations with marsh-mallow. On the 20th, the inflammation had disappeared. From this date, cicatrization went on rapidly; and the child left the hospital without any trace of the operation, except a stiffness of the joint, which will disappear in course of time.

AQUEOUS SOLUTION OF CHLOROFORM: ITS TOPICAL USES IN SURGERY.

M. Sauvé, a Parisian pharmaceutist, recommends the aqueous solution of Chloroform as a topical application: and it is probable, that this will be a good form of administering it internally, when inhalation may appear hazardous. M. Sauvé recommends that one grammé of Chloroform be shaken for twenty minutes in 125 grammes of distilled water. The Chloroform becomes dissolved in the water, from which it is not precipitated. In this diluted form, Chloroform preserves its anæsthetic properties, without any of its inconveniences; for pure Chloroform acts violently on the skin. It appears

that numerous Parisian physicians and surgeons have employed the aqueous solution of Chloroform. M. Cazenave has successfully used it in some skin diseases. M. Malgaigne applied compresses, soaked in the aqueous solution of Chloroform, to the uterus of a woman suffering sympathetic pains in the thigh, from neuralgia of the uterine appendages. The patient stated that she experienced relief. M. Jules Roux mentions, that when applied upon the surface of wounds, heat is at first caused, as well as slight pain; but these are soon replaced by a feeling of great comfort. The insensibility of the wound continues for a longer or shorter period, according as it may be recent or not; but the state of anæsthesia never extends to the whole economy. M. Roux alledges, that after having applied Chloroform to a wound, he can cauterize it with nitrate of silver, without producing present or subsequent pain. Upon one occasion, in amputating the first phalanx of the index finger, he threw the patient into a state of insensibility: before proceeding to dress the wound, he sprinkled it with the aqueous solution of Chloroform, and, when the patient became conscious, he did not feel the manipulations of the surgeon. At subsequent dressings, the same system was adopted, so that the patient never experienced any pain from the operation, nor from the dressing of the wound. M. Roux has applied Chloroform after the same fashion, as a local anæsthetic, to the parts in an operation for phimosis and to painful ulcers; and he has likewise used it as an injection into fistulæ and hydroceles.—(*Journal de Méd. et de Chir. Pratiques*, Decembre 1848, p. 642; and Janvier 1849, p. 34.)

Numerous experiments have been made with Chloroform, as a local anæsthetic, by Professor Simpson of Edinburgh, who seems not only to have had the good fortune to introduce this valuable agent into the practice of surgery, but also to be the foremost to illustrate its application in every department of the healing art. Dr. Simpson's paper appeared in the *Edinburgh Monthly Journal* for October 1848. The result of his researches is not, however, nearly so encouraging, as to the advantages of Chloroform as a topical anæsthetic in surgery, as those of the French surgeons above quoted. This may depend upon the latter employing the aqueous solution, in place of the pure drug or its vapour. That the pure Chloroform ought not to be used locally, is apparent from one of Dr. Simpson's conclusions, which we subjoin. He says: "There are few operations in which there is not previously a local broken surface, and the application of Chloroform, etc., to such a surface, would be far too painful to be endured, no small degree of suffering sometimes arising from even the exposure of the unbroken skin to their action."

Mr. Nunnelly of Leeds (*Provincial Med. and Surg. Journal*, June 28, 1848), has instituted an elaborate series of original experiments, from which he infers, that anæsthetic agents may be used with advantage and safety. This gentleman, however, also seems to have been unaware of the superior advantages of the aqueous solution; for he tells us, that the first effects are pain, or redness, heat, and smarting; and that redness and swelling continue after the pain has subsided.

Mr. Spry, surgeon to the Truro Infirmary (*Provincial Journal*, August 28, p. 459), resorted to the local application of Chloroform in the case of a tumour, two inches long and one inch wide, on the sole of the foot. Folded lint, saturated with the Chloroform, was applied to the tumour, and a piece of oiled silk placed over it. In a quarter of an hour, the lint was again moistened with the Chloroform; and, in about half an hour, the patient could bear pressure on the tumour without complaining. The tumour was then removed. The patient declared that he felt only a very trifling pain at the deepest part of the dissection, but none during the division of the skin.

From the above statements, we think that Chloroform may yet become a valuable topical anæsthetic, and prove useful as such, both to the physician and the surgeon. The aqueous solution is the most suitable form yet made known.

OBSTETRICS.

DIGITAL EXAMINATION, AND THE SPECULUM: THEIR USES AND ABUSES.

A feeling against an indiscriminate but too common reliance on the Speculum seems to be gaining strength, both in this country and in France; and we only hope that, while the evils and improprieties connected with the abuse of this instrument are exposed and denounced, the current of professional opinion may not set in too strongly against its employment; for, in a large number of cases, it must be regarded as the only means, through which a correct diagnosis can be obtained. With this introductory remark, we have much pleasure in calling attention to the following admirable observations of M. MALGAIGNE, which form part of a clinical lecture lately delivered at the Hôpital Saint-Louis, of Paris; and which is reported at page 638 of the *Journal de Médecine et de Chirurgie Pratiques* for December 1848:—

"Authors have erred grievously, in describing diseases of the uterus as diseases *sui generis*. They ought to be regarded as simple affections, which, in many cases, are best managed by avoiding all active interference. While admitting the use of the *toucher* and the speculum as aids to diagnosis, I must also state, that they often lead to errors which, without them, might be avoided. A surgeon was consulted by a lady, whom, after examination, digitally and by the speculum, he treated for engorgement of the neck of the uterus. He assured her that the cauterization had cured the disease; nevertheless she continued to suffer. The explanation was this.—He had gone beyond the seat of that disease which was really annoying her. She had inflammation of the follicles of the urethra, whence arose the burning sensation (*cuisson*), and the shooting pain. I passed the solid nitrate of silver, on several occasions, over the affected part; and the pains were cured. Another patient, who likewise had been cauterized for ulceration of the cervix, came to me, complaining of fluor albus, pain and a dragging sensation. I digitally examined this woman, standing; and found the cervix behind, and the body of the uterus in front. It was anteversion of the womb which had caused the engorgement, the fluor albus, and the sympathetic pains. She had been examined when lying on her back, and in this way the anteversion had not been discovered; but, as there was redness of the cervix,—the effect, and not the cause,—ulceration was diagnosed, and cauterized; the principal affection being neglected. Women who suffer from affections of the genital passages, always fancy that they have prolapsus, if they have consulted a midwife, and ulceration of the cervix, if they have been to a doctor. With this class of patients, there is no other description of disease. Yet we know, from experience, that prolapsus is extremely rare. We must receive with reserve the reports of interested parties, both regarding prolapsus and ulceration of the cervix. The patient must be examined in the upright position, or *à croupion*, which is still better, if you wish to make evident a state of anteversion. When this has been made out, you may possibly find engorgement along with it; but bear in mind, that in every woman who has had children, the neck of the womb is twice as large as in a virgin. If the patient complain of a little pain, you are apt to mistake the natural for the morbid engorgement; and if you use the speculum in such a case,—what do you discover? Why, if the woman have borne children, you find abrasions, redness, and such excoriations as you see within the nostrils of a child affected with coryza. These insignificant excoriations assume, in your prejudiced mind, the importance of ulcers; and, deceived by the speculum, the pain complained of, and the white discharge, you unhesitatingly cauterize. This is a department of therapeutics in which great reforms are required."

TREATMENT OF ENGORGEMENT AND ULCERATION OF THE CERVIX UTERI, RECOMMENDED BY M. MALGAIGNE.

In the clinical lecture already referred to, we find M. MALGAIGNE laying down the following rules: "There is no more propriety," he says, "in cauterizing trifling excoriations of the cervix, than there is for adopting similar treatment in a case of coryza. On the first day, a pencilling with the nitrate of silver would be of real service; but then we are not called sufficiently early to put in practice this method of cure." When engorgement exists, it is inflammatory; and M. Malgaigne attacks it as such. He bleeds, if need be; he enjoins repose, and the application of poultices, during the day, to the hypogastrium. He often finds poultices applied to the interior of the vagina of much benefit. In a patient with an engorgement simulating schirrus, the poultices caused the induration of the cervix entirely to disappear; and thus removed all anxiety as to the nature of the disease. In other cases, they destroyed morbid adhesions between the cervix and vagina. Patients can introduce the poultice for themselves, by carefully enclosing it in a bit of muslin, and giving it a shape suitable to its destination. A patient who could not retain in the vagina a simply emollient poultice, with advantage substituted one made of linseed, mixed with a decoction of poppy heads. As topical applications of this description are troublesome, injections may be used in place of them, during the day. After five or six days of this treatment, the engorgement is generally diminished. A restoration to the normal volume is not to be expected; for when the cervix has once been gorged, it never assumes its original condition. The important point is, that the pain has been got rid of. Some women, when in the recumbent position, are quite comfortable; but whenever they get up, suffer pain, a feeling of weight and dragging, and a desire to make water. In such cases, M. Lisfranc would use the cautery, and confine the patient to the sofa. M. Malgaigne avers, that he has seen patients of this kind so treated during months and years; and who continued to suffer as much as ever on discontinuing the recumbent posture. This pain, which is absent during decubitus, and present when the woman rises up, evidently cannot depend on inflammation, and must be caused by a vicious position of the uterus, resulting from a species of torsion which the organ undergoes when the person is upright. The hypogastric cincture palliates, if it do not cure, such cases; and, by using it, women subject to anteversion can walk without suffering pain.

So much for simple engorgement: but engorgement may be complicated with ulcerations, leucorrhœa, and pains of a different nature from that already considered. These pains are most commonly in the region of the kidneys; they may be considered as symptomatic of neuralgia of the cervix; and can in no way be attributed to dragging exerted by the uterus, as they are felt by the patients both when recumbent and upright. These pains almost never resist three or four bleedings by cupping. When the neck of the uterus is affected with neuralgia, the sympathetic pains are always in the parts above; whereas, when the affection is in the appendages of the uterus, the sympathetic pains are observed in the parts below, as the buttock and thighs. Neuralgia of the cervix, as can be verified by the aid of the *toucher*, causes pains in the abdomen, the mammæ, and dorso-lumbar region, and even simulates neuralgia of the latter.

M. Malgaigne is in the habit of incising, with the bistoury, that part of the neck of the uterus, which is most painful on pressure. The pains, which had radiated from that point to the mammæ, etc., have sometimes disappeared as if by enchantment. As this little operation may present some difficulties in women who have not had children, and as there are other cases in which it may not be suitable, milder means ought in the first instance to be tried. Indigenous aconite M. Malgaigne tried without benefit: but he had better results from that which Double recommended and used, viz., aconite from

the Swiss mountains. In one case, pains in the abdomen and right breast, immediately ceased on its use; but in other cases, the neuralgia only lost its intensity. In a case in which Swiss aconite failed to produce more than temporary benefit, a cure was accomplished by vapour baths. Blisters are sometimes useful. Chloroform dissolved in water is still more beneficial. [Some remarks on the preparation and uses of the aqueous solution of Chloroform will be found at p. 201.]

NEW OBSTETRIC INSTRUMENTS.

In the *Medical Times* of January 13, 1849, (p. 235, is a report of the Edinburgh Obstetrical Society, at which Dr. Simpson exhibited "a new obstetric instrument, which, when further perfected, he thought might prove useful in many cases where the short forceps were now ordinarily applied"; and the Belgian *Presse Médicale* for December 31, 1848, contains a lengthened article by M. Thiry on the forceps-saw of Professor Vanhueval of Brussels. "This beautiful instrument", says the writer, "aided by the *geometric pelvimeter* of the same author, evidences not only a progressive advancement in the obstetric art, and the perfection of obstetrical operations, but establishes a complete revolution—*une véritable révolution*—which entirely overthrows the defective practices which have hitherto been so much praised in midwifery." We cannot help feeling the truth of the old adage, that "bad workmen have always bad tools." Good practitioners will do more, and that with less fuss and difficulty, with their old-fashioned short forceps, than others with all their new "appliances and means to boot." Few instruments, and those of simple construction, are required by men who really know their business; but, unfortunately, the chief aim of the instrument makers and designers seems to be, by an ingenious combination of springs, and guides, and guards, to enable a bungling practitioner to play at operating with as little loss of life as possible. Of Dr. Simpson's instrument we are merely told, that it is a concave disc, made to adhere to the child's head on the principle of a school-boy's sucker. Professor Vanhueval's instrument is not described; but we gather from M. Thiry's memoir, that it is a contrivance for breaking up the cranium, and reducing the size of the fœtus in a deformed pelvis—no difficult nor dangerous matter, in the hands of a careful practitioner, even with the common instruments generally in use.—(Abridged from the *Medical Times*, 20th January 1849.)

FORENSIC MEDICINE.

URIC ACID IN THE KIDNEY, ALLEGED TO BE A SIGN THAT A CHILD HAS BEEN BORN ALIVE.

Dr. Virchow, in the Transactions of the Berlin Obstetrical Society, has proposed a sign, to ascertain whether a child has been born alive; or rather, whether it has lived more than two days. The test is to be found in *the absence or presence of uric acid in the kidneys*.[1]

Dr. Virchow wishes to show that the presence of uric acid in the kidney (at once to be detected by the naked eye), is a conclusive proof that the child found dead has been born alive. The ancient anatomists remarked a red or yellowish substance coating the mammillæ of the kidneys of infants, and which modern science has found to be uric acid, and analogous to the calculi sometimes found in the bladder of children. Schlossenborn treats of it under the name of "Infractum acidi urici"; and it is easily discovered by making a transverse section of the kidney, when a considerable number of yellowish-brown, and sometimes light yellow, rays of this substance, are seen ramifying from the tubular, and sometimes from the cortical, substance, to the mammillæ. Under the microscope, we make out sometimes solid cylin-

[1] We particularly recommend our readers to peruse a valuable paper by Dr Schlossberger, the substance of which is given at p. 249 of the Edinburgh Monthly Journal for March 1845.

drical particles, of a yellowish-brown colour, though more frequently these cylinders seem to be not yet formed, or to be broken up into molecules of a darker colour, round or angular, and not unlike the crystals of urate of ammonia. A greater quantity is obtained by pressure. The conclusions of Dr. Virchow, are :—

1. That the deposit is never found in children who have been born dead, or who have died within forty-eight hours after birth.

2. That the deposit is not found, or does not occur, until about forty-eight hours after birth.

3. That the deposit is not generally found later than the twentieth day after birth.

There are, however, exceptions to these rules; for the deposit was, in one case, found on the twenty-ninth day after birth; and Dr. Virchow had not found it in an infant dead on the tenth day; nor in another on the thirteenth; nor in a third on the sixth day. These, however, may be the consequence of disease. The subject is now left in the hands of British observers, who, I trust, will soon determine the value of Dr. Virchow's views.—[Abridged from Dr. Bushnan, in *Medical Times* for January 20, 1849.]

REAL AND APPARENT DEATH.

The doubts which were entertained, during several days, of the reality of death in the celebrated Professor Dieffenbach, induced Dr. Van Henger to seek for some positive method of ascertaining the fact. Starting from the opinion, that the functions of the brain and of the spinal chord may be momentarily paralyzed, whilst those of the ganglionic system persist, Dr. Van Henger concludes that although, to all appearance, life may have ceased, still, if death be only apparent, animal heat will continue to be generated in the organs placed more directly under the influence of the ganglionic system. These organs occupying the abdomen, (if it were possible to ascertain the persistency or the abolition of heat within that cavity), the proof might be obtained of the reality of death, or of the fallacy of external appearances. For this object, Dr. Van Henger has invented a sort of thermometer, appropriate to such researches. The instrument consists of a caoutchouc tube, 60·75 cents. in length (about two feet), closed at one extremity, open at the other. To this extremity, a glass tube, resembling, in shape, a horse-shoe, may be adapted, containing a small quantity of mercury. In order to discover if any heat continues to be developed within the abdomen, the flexible tube should be introduced into the intestines as far as the cœcum, if possible; about six or eight grammes of sulphuric ether (ʒij.) are then poured into the tube, to which the glass instrument is adapted. If any heat persist in the intestines, the evaporation of the ether will cause the mercury to rise in the glass. Under contrary circumstances, the mercury will remain stationary.—[From *Medical Times*, January 20, 1849.]

MATERIA MEDICA AND PHARMACY.

COLLODION: ITS HISTORY, PREPARATION, PROPERTIES, AND MODE OF APPLICATION.

1. History.—Although the employment of Collodion in Surgery has not long attracted notice, it appears that chemists have, for some time, been aware of the solubility of gun-cotton in ether. In the *Annales de Thérapeutique* for September and October 1848, it is stated to be a French discovery; M. Baudin having first communicated it to the *Académie des Sciences* in December 1846. Its solubility in acetic ether was shown by Richner (vide *Chemical Gazette*, February 1, 1847), and also by Schoenbein and Boettler. Schoenbein found that "the solution, when spread on a smooth surface, left a dull white opaque membrane." (*Ibid.* April 1, 1847.) Dr. B. Frank (*Der Mediziner*, as quoted in *L'Union Médicale*, 3 Avril, 1847) employed the solu-

tion in acetic ether, as a dressing for gangrenous sores. The use of Collodion, as a varnish, was illustrated in America, by Dr. C. T. Jackson, in December 1846, or January 1847. The priority of the application of the adhesive properties of this substance to surgical purposes, is claimed by two persons: Dr. H. J. Bigelow, of Boston, and Mr. G. P. Maynard, a medical student of the same place. In the "Report on the Progress of Surgery," by Henry Ancell, Esq., in *Dr. Ranking's Abstract*, vol. viii, p. 265, it is stated that, soon after the commencement of 1847, Dr. H. J. Bigelow, in employing a bottle of the solution as a varnish, "accidentally smeared it on a fresh wound on his fingers. The smarting produced called his attention to the wound, and he endeavoured immediately to rub it off; but it had dried nearly instantaneously, and remained on. The smarting soon ceased; and, when the film was removed, union had taken place." The *American Journal of the Medical Sciences*, for April 1848, announces, that there had lately been shown to the editor, "by a young medical student, Mr. G. P. Maynard, of Boston, a liquid adhesive substance, which he has introduced as a substitute for the common adhesive plaister; and over which it seems to possess many advantages, and to be applicable in many cases in which the latter is not. It is formed by treating cotton with nitric and sulphuric acids, then washing the substance thoroughly, and afterwards dissolving it in pure sulphuric ether." Since these publications, various communications on the properties, mode of preparation, and uses, of Collodion, have appeared in the British and foreign journals.

2. Mode of preparation.—The process described above for the formation of Collodion, by treating cotton with nitric and sulphuric acids, and dissolving the substance in ether, does not appear to have succeeded in the hands of other experimentors. In *L'Union Médicale*, September 7, 1848, M. Malgaigne states, that Messrs. Foy, Dublanc, and Mialhe, had failed in the attempt to dissolve the gun-cotton in ether. M. Mialhe at length succeeded, by treating cotton with nitrate of potash and sulphuric acid, in forming a soluble material. His process is as follows:—

"Powdered nitrate of potash	...	400 grammes
Concentrated sulphuric acid	...	600 —
Carded cotton		20 —

"Mix the nitric with the sulphuric acid in a porcelain capsule, then immediately add the cotton, and stir the mixture well with two glass rods for three minutes. Wash it well in water, without pressure; and, when it is completely free from taste, press it strongly through linen, pull it out with the fingers, and dry it by the heat of a stove. Gun-cotton, thus prepared, is not pure; it always contains a certain quantity of sulphuric acid, is less inflammable than good powder-cotton, and leaves a carbonaceous residue, with sulphur, after explosion; but it is soluble in ether, especially if a little alcohol be added. Hence it is this preparation which must be used in the formation of Collodion. To prepare the Collodion, take of:—

"Prepared cotton (*xyloidine sulfurique*)	...	8 grammes
Rectified sulphuric ether	...	125 —
Rectified alcohol	...	8 —

"Introduce the gun-cotton and ether into a well-stoppered bottle, and agitate the mixture briskly for some minutes; then add the alcohol (by degrees), and continue to shake till the whole mass appears homogeneous, and of a syrupy consistence. Pass it through a cloth, strongly pressing the residue, and keep the liquid in a well-secured bottle." It should not be filtered; its efficacy seeming to depend a good deal on some undissolved fibres of cotton left in it, which appear to become entangled during the evaporation of the ether. In *L'Union Médicale* of September 9, M. Mialhe strongly inculcates the necessity, (which had been shown by M. Soubeiran,) of the materials with which it is prepared being free from water; and also, that the parts to which it is applied should be perfectly dry.

3. Properties.—Collodion, in whatever manner procured, (provided attention has been paid to the precautions just mentioned,) is, at first, an opaline adhesive fluid, smelling strongly of ether, and becoming perfectly transparent, by the deposit of a tenacious shreddy material, when at rest. When a layer of this is laid on any surface, a transparent coating is left, by the evaporation of the ether, which possesses, in a marked degree, the properties of *contractility* and *adhesion*, as well as *transparency, pliancy*, and *impermeability*. Dr. Bigelow says: "By its powerful contraction upon evaporation, it places the edges of an incised wound in much more intimate contact than is obtained by sutures and adhesive cloth; unites them, by equal pressure, throughout the whole extent of the wound, and maintains them immoveably fixed." In his letter to the *Lancet*, already referred to, Mr. Erasmus Wilson points out its contractile property as producing a local pressure of considerable power, on the surface to which it is applied; and hence he considers it a valuable agent, in the treatment of congestions of external parts of the body. Mr. Maynard proved its strong adhesive powers by the following experiments: "A strap of sheep-skin, glued to the hand by a thin layer of the solution, nine inches long, and one and a half wide, sustained a weight of two pounds. A second strap, attached to the hand by a layer of the substance, nine inches in length, and three in width, sustained a weight of three pounds. A third strap, fixed to the hand by a layer of the liquid, twelve lines square, resisted the force of ten pounds without giving way; and a fourth strap of the leather, glued to the hand by a stratum of the solution, measuring one and three-fourths of an inch in length, and one in width, was not separated from its attachment by the gravity of twenty pounds. These statements may appear incredible; but they are founded on exact and carefully performed experiments, and are true." (*American Journal of the Medical Sciences*, April, 1848.) Its other properties are thus summed up by Dr. Bigelow: "It preserves the wound perfectly from contact with air, being impermeable to the atmosphere; while its adhesion to the skin is so intimate as to prevent the possibility of air entering beneath its edges. The substance remaining in contact with the skin and wound, after the evaporation of the ether, so far as any irritating property is concerned; and this can scarcely be said of any resinous adhesive cloth or preparation." (Mr. Erasmus Wilson considers that, "as a mild stimulant, it is fitted to exert a local alterative action on the congested capillaries of a chronic ulceration, and give activity to the healing process.") "It does away with the necessity for sutures in incised wounds of almost any extent. It is sure to remain in intimate contact with the skin till union is complete; and, being quite impervious to water, and presenting a polished surface, it allows the surrounding parts to be washed without regard to the wound or dressing. It is colourless and transparent; thus permitting the surgeon to witness all that goes on beneath, without involving the necessity for its removal. No heat is necessary for its application; and the presence of a moderate degree of cold is only objectionable, in retarding the evaporation of the ether. It may be made at a trifling cost; an ounce phial, intrinsically worth little, being sufficient for a great number of dressings."

4. Mode of Application.—Dr. Bigelow gives the following directions for the application of Collodion: "For straight incisions, of whatever length, provided the edges can be brought together without great difficulty, it is better to supply the solution in immediate contact with the skin, as follows. The bleeding should be arrested, and the skin thoroughly dried. If the lips of the wound are themselves in contact, the surgeon has only to apply a coating of the solution lengthwise over the approximated edges by means of a camel's hair pencil, leaving it untouched after the brush has passed over it until it is dry, during, perhaps, ten or twenty seconds. This first film will of itself have confined the edges together; but in order to increase the firmness of the support, more must then be applied in the same manner, allowing

it to extend on either side of the incision, half an inch, or more." When the wound gapes, the edges must be held together; and if the wound be long, the Collodion must first be applied to the upper part, and allowed to dry. In such cases, something more than the film of Collodion is required to counteract the tendency of the edges of the wound to separate. For this purpose Dr. Bigelow recommends gold-beater's skin, or oiled silk, which maintains the transparency of the dressing; it should be applied to the wound after the solution has dried and firmly contracted. Lint, or a piece of cloth, or tissue paper, though not transparent, would answer. If, however, adhesion by the first intention be not desired, the Collodion may be laid on transversely like strips of plaster; and one strip should be dried, and have the support of gold-beater's skin, before the rest is applied. Room is thus left for the escape of pus, and for the surgeon to view the progress of the wound. Collodion answers particularly well after the operation for hare-lip, or cancer of the lip, where union by the first intention, and a narrow linear cicatrix, are so desirable. The use of one or two sutures to the mucous surface is not obviated, as this will not permit the Collodion to adhere with sufficient certainty (*Boston Med. and Surg. Journal*, as quoted in Dr. Ranking's *Abstract*, vol. viii, p. 267). Mr. Maynard says, that "in most instances it was employed in conjunction with straps of cotton and sheep-skin, forming with them strong, unyielding, adhesive straps, bandages, and encasements; and, after many experiments, I am convinced that this is the best and most effectual way in which it can be applied as an adhesive agent in surgery." *American Journal*, ut supra). The following remarks on its use in conjunction with bandages, in the dressing of wounds, occur in the *Annales de Thérapeutique*, Sept. and Oct. 1848, p. 242. When dipped in the Collodion, bandages are apt either to be difficult of removal, or not sufficiently adhesive, from having dried before they can be applied. In small wounds, bandages are unnecessary; but in cases where they are necessary, they should be strongly fastened at each turn, by a layer of Collodion, at the most distant part only; and the free part of the bandages may be sewed, or tied with strings. The adhesive dressings may be softened with Collodion to remove them, and it may be removed from the hands by washing them in ether. Collodion may probably be used instead of starch or dextrine, to a bandage enveloping a limb; or perhaps the limb may be coated with several layers of the solution. Numerous other applications of the substance may be made; and its use to the pathologist or student, in dissections, must be obvious.

DR. MARSHALL HALL'S SUGGESTION FOR A NATIONAL PHARMACOPŒIA.

We hope that the suggestion of Dr. Marshall Hall, for the establishment of an Uniform and Decimal Pharmacopœia, may be taken up by the Colleges and the Government. Were a simple codex adopted (such as that proposed by Dr. Marshall Hall, in the following extract from his article in the *Edinburgh Monthly Journal* of January), much anxiety would be saved to practitioners, and many fatal accidents avoided. We hope that Dr. Hall will keep stirring up the profession and the public, with reference to this reform, till the authorities are made to move.

"It is impossible to look over our Pharmacopœias, without feeling that their complexity and diversity are very serious, as they are very unnecessary, obstacles in the way of the student and practitioner of medicine. As to the student, his memory is taxed to the very utmost, before he can venture to appear before the examining boards. The practitioner is not less fettered and hindered in his daily career of prescription. An English physician would scarcely know how to prescribe in Edinburgh or Dublin; and even in England he will sometimes find it difficult to prescribe certain important remedies, the hydrocyanic acid for example, in a manner at once efficacious and safe—a difficulty which is increased on the introduction of any new remedy or reme-

dies. In a word, no principle guides us or guards us in this most important department of our art. In order to set forth the defectiveness of our present Pharmacopœias, I need only advert to those preparations, each containing opium,—the pulvis cretæ compositus cum opio, the pulvis kino compositus, the pulvis ipecacuanhæ compositus,—not, however, in the same proportion, but in that of one-fortieth, one-twentieth, and one-tenth! It is the object of this very brief paper to suggest such a principle—a principle which will become, I think, of equal utility to the student and the practitioner, and safety to the patient, under all these varied circumstances. It is that of a uniform Decimal Pharmacopœia in all the British dominions.

"The first step to be taken will be to get rid of the varied modes of determining *quantities*. If we would attain accuracy, these must be limited to one, viz., *weight;* all other modes, such as that by *drops*, and that by *measures*, being discarded altogether.

"Our next step is to discard all the confusion, even in regard to weights, which have so long prevailed, especially that between avoirdupois and apothecaries' weight. In vain is one weight cast circular and the other square. I am persuaded that, to this day, one ounce of the one is confounded with one ounce of the other, and this is a confusion between 480 and 437 grains. But let *one grain*, however this may be determined, be the *unit*, and and let the greater weight be *ten*, *one hundred*, *one thousand*, *decem*, *centum*. *mille*,—progressive multiples of that unit. Let the officinal preparation of each energetic, and therefore dangerous remedy, solid or fluid, be such, that the medium dose shall be one grain, or more frequently ten grains, or one unit or decem by *weight;* that of others, as the tinctures generally, the infusions, etc., being such, that 100 grains, or nearly ¼ oz. (℥i ℈ij) a centum, 1000 grains (℈ij ℈ij) or a mille, or nearly two ounces respectively, may be at once an efficient dose, yet far from inconvenient. The phials containing each of those distinct *orders* of preparation should be of *proportional* size; and those of each *order* should be arranged together, and distinctly from the rest. Lastly, let the number of grains, or the terms decem, centum, mille, or millia, be written instead of those remains of antique darkness and mystery, ℈i. ℥i. ℈i. Ten grains are about the medium dose of the pulvis ipecacuanhæ compositus. All other important remedies may, like the opium and the ipecacuanha of this preparation, be so mingled with some appropriate inert substance, as to make the medium dose *ten* grains or one *decem*. The medium dose of the officinal preparations, containing the chloride or the bichloride of mercury, of arsenic, of morphia, of hydrocyanic acid, and of strychnine, should, in like manner, be ten grains by weight. The same rule will apply to all the metallic salts, to iodine and the iodides, to the alkaloids, and to every remedy of energy and power. In like manner, the medium dose of the liquor hydrargyri bichloridi, the liquor potassæ arsenitis, the tinctura opii, the acidum hydrocyanicum, should be *ten* grains.

"If now a mistake be made in the hurry of prescription or of composition (and who is infallible?) no fatal or injurious consequence can follow. No one will be afraid of prescribing the ascertained safe or medium dose of the most powerful medicines even; his sanction, in the case of any untoward peculiarity of constitution, being the authorized Pharmacopœia, founded on the experience of the most experienced in the profession. Each practitioner will, of course, judge whether, in the case of the delicate and the young, a minor dose than the medium dose should be first prescribed.

"It may also be a question for careful consideration, what modification of the plan proposed may be required for infants and children? The plan itself will require the alteration and modification of the whole Pharmacopœia; but no great good is ever obtained without a proportionate effort. A principle, at least, will be introduced into our national Pharmacopœia for the first time. There is nothing in this arrangement of the Pharmacopœia to curtail the just freedom of prescription or of commerce, only I would distinguish the pharmacy from the warehouse and the shop."

REPORTS OF SOCIETIES AND ACADEMIES.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

FOURTH MEETING OF SESSION 1848-49. TUESDAY, JAN. 9, 1849.—J. M. ARNOTT, ESQ., F.R.S., PRESIDENT.

OBSERVATIONS ON KELOIDES, WITH ILLUSTRATIVE CASES. BY ERASMUS WILSON, ESQ., F.R.S.—The author observes, that in no case "is an operation warrantable until every chance of relief by other means has failed." Mr. Wilson had three cases in healthy-looking men; in the first, the disease was developed on the presternal region, and also on the leg; in the second, on the shoulder and gluteal region; in the third, as in the first, on the sternum. It presented itself in the two forms, designated by Alibert *keloide radiciforme* and *keloid cylindracée;* in the first and second cases it gave rise to extreme inconvenience, and to much of the peculiar burning, stinging, and smarting pain which is characteristic of the disease; but in the third, it was extremely reduced in size, having undergone a spontaneous cure.

ON A CASE OF CHELOIDEA COMPLICATED WITH A LARGE TUMOUR IN THE OCCIPITAL REGION. ILLUSTRATED WITH CASTS AND DRAWINGS. BY W. OLIVER CHALK, ESQ.—The subject of these local affections was G. G—, aged twenty-one, a native of Oxford, admitted into the Royal Sea-Bathing infirmary, August 9th, 1845. After a description of the tumour, and a minute account of the number, form, situation, and appearance of the keloid formations, the author observed, that cheloidea was the name given to this disorder by M. Alibert, in his *Monographie des Dermatoses* (p. 195, second edition), and was first recognized by this writer as being *sui generis*, and classed by him under two heads—"Kelis Genuina," "Kelis Spuria"; the former, "a cancerous affection, characterized by a single excrescence, rarely by more; more or less hard when compressed by the finger; round or square; flattened in the centre, raised at the edges like a circular cushion, (en manière de bourrelet)"; the latter, "the result of the inflammation of cicatrization, after a burn or ulceration; for example, scrofula, or syphilis." The chief interest in G—'s case was derived from the number and variety of forms of the keloid excrescences, which were singularly illustrative of Alibert's description of the malady, and the rapidity with which most of them disappeared, under the general treatment directed to the restoration of the hepatic functions especially, by means of leeches, mercurial alteratives, tonics, etc., persevered in from Sept. 2nd until Oct. 20th. The author learned, that he returned to the Royal Sea-Bathing Infirmary in the spring of 1846, and was then suffering from jaundice and great disturbance of the sensorial functions, together with ulceration and hæmorrhagic tendency of the tumour, which had assumed a malignant character, and that he died in the October following, in London, on his way home to Oxford.

Mr. MACILWAIN thought that the general health was always deranged.

Mr. CHARLES HAWKINS did not consider this disease a very rare one. Mr. Cæsar Hawkins had fully described it in a lecture, published in the *Medical Gazette*, some years since; and he (Mr. Charles Hawkins) had seen some cases of the disease, certainly more than three. In one of these cases, the patient was a young woman apparently in excellent health; at all events, she looked well, slept well, and ate well. She had suffered previously from some disease of the chest, for which tartar-emetic ointment had been freely used. From the spots left by the pustules, keloides developed itself, and when he (Mr. Hawkins) was first consulted, the patient had six tumours on the chest, varying in size from a sixpence to a half-crown. Lotions of various kinds were applied, but without any effect, and she experienced great incon-

venience from the disease when, in her capacity of cook, she was obliged be near the fire. She was fearful that the tumours would get larger, a applied to him to have some more effectual remedy applied. He advis her, however, to let the complaint alone, and in this opinion Mr. Ces Hawkins concurred. In another case, a man had applied to him with keloid tumour over the sternum. The growth was removed by the knife, the earnest solicitation of the patient. From the eschar the disease aga presented itself, and was again removed. The third time it returned of larger size, and no further interference was resorted to.

Mr. B. PHILLIPS had seen two cases, during the last two years, in t Westminster hospital. One of these cases was very similar to the first o related by Mr. Hawkins. The patient was a young woman, sixteen years age, and in apparent good health. Keloid tumours followed the irritati consequent upon the use of tartar-emetic ointment. She said the growt were painful ; but it was probable she was fearful of the disease interferi with her good looks. She requested that some application should be ma to them, to get rid of them. He applied strong acetic acid ; but as this w not successful, at her urgent request, he removed the tumours with the knif A considerable margin was left, and the parts were attempted to be brou together; but eventually healed by granulation. The patient left the ho pital well. In a month, afterwards, however, she returned with simil growths; one being three inches in length, and very like one of the tumou in Mr. Wilson's case. After much pressing, he again operated, leaving a sti wider margin, and making no attempt to bring the divided edges of t wound together. The wounds healed by slow granulation. She remained good health, but small tumours were again developing themselves. In t second case, the patient was a woman, twenty-five years of age, who ha seven of these tumours on one mamma, and five on the other. Some of the were as large as a cherry, and of all shapes and sizes. He refused to attem their removal by the knife ; and to one he applied the chloride of zinc, an it was removed. Through another he made a crucial incision, and appli the potassa fusa to the wound. To another, so incised, he applied the nitra of silver ; but as soon as the parts in each of these healed, the tumours ga signs of growing again.

Mr. LLOYD did not think the disease very rare. He had seen man similar cases. He recollected one instance of it in a cook, in whom the di ease was situated in the leg. She was subjected to a variety of treatmen without benefit, and Mr. Lawrence eventually removed the growth with t knife. The disease never returned. In another case, a woman had a kelo tumour over the sternum, consequent upon the use of tartar-emetic ointmen She applied to various surgeons. Some said, remove it by caustic ; othe recommended the knife. He (Mr. Lloyd) advised that neither proceedin should be adopted ; but prescribed a soothing application, to be constant used. In two years the disease entirely disappeared, and did not return. another case, no treatment was employed, and the disease eventually go well. He had seen keloid tumours in connexion with malignant disease in other parts of the body. He thought these growths *generally* malignant and, if they ulcerated, would kill. He believed, however, that there wa generally something wrong in the constitution, and removal of this forme a chief element in the cure.

Mr. E. WILSON said : As to the rarity of the disease, he thought the di cussion had proved it so. The French authors had related twenty-four case add to these the cases related to-night, from the great hospitals, and th result would prove the complaint to be rare.

Mr. CHALK also thought the disease was a rare one. He agreed with M Macilwain, that the general health was usually deranged, although th patients might say it was good. Thus, the man G—. said his health wa excellent ; but an examination over the hepatic region resulted in a pain, a

that part, for two or three days afterwards. As his general health improved, the disease gradually gave way, and he left the infirmary well. He had since returned, with jaundice; and the disease had reappeared in an aggravated form.

APPENDIX TO A CASE OF "SUCCESSFUL REMOVAL OF AN OVARIAN TUMOUR COMPLICATED WITH PREGNANCY." By H. E. BURD, Esq., Senior Surgeon to the Salop Infirmary.—The case is narrated in the thirtieth volume of the Society's *Transactions*. The subject of the operation became pregnant the year following her dismissal from the hospital; went her full time, and gave birth to a strong male child. She is now again in the full enjoyment of unimpaired health.

MEDICO-CHIRURGICAL SOCIETY OF EDINBURGH.

THIRD MEETING OF THE SESSION.—WEDNESDAY, JANUARY 3.

The PRESIDENT, upon taking the Chair, delivered an interesting address. He expressed his sense of gratitude for the kind feeling of the members of the Society, which had led them to place him in the Chair. The only return he could make was, to exert every effort to promote the objects for which the Society was instituted, viz. assisting in the accumulation and diffusion of medical science, increasing the good understanding and fellowship of the members of the Society, and maintaining the honour and dignity of the profession. He particularly alluded to the great benefit that might be derived from the communication of detached cases, occurring in the ordinary course of practice, together with the exhibition of morbid parts concerned: and in support of his views read an address by Dr. Abercrombie, while he was President of the Society. Communications of the kind alluded to had been occasionally introduced at their meetings, but had never constituted more than a secondary part of the business. The reason of this might have been the existence of a "Pathological Society" in Edinburgh, but as it had some time ago ceased to exist, there could be no objection to their meeting fortnightly instead of monthly; the alternate evenings being devoted to this purpose.[1] In order to maintain the honour and dignity of the profession, they had of late years heard much of contending for Royal Charters and Acts of Parliament; but he must confess, that he altogether distrusted such means, either for elevating themselves, or for keeping down the presumptuous individuals who ventured to undertake the treatment of disease without having passed through the schools. In Mr. Syme's opinion, a College of Physicians or Surgeons has no claim for respect except what is founded upon the character of its members, and the assistance contributed by them to the advance of medical science. He saw no use in attempting to effect a classification of the profession, which the public assuredly always would, and alone could do. Instead of attempting to suppress quackery by penal enactments, he thought the more reasonable course was to elevate the profession in the estimation of the public, so as to satisfy them that it was for their own advantage to avail themselves of services rendered safe and efficient by study and experience, in preference to those of ignorant and designing empirics. Medical practitioners in Edinburgh enjoyed the best opportunities of cultivating their profession, and its collateral branches. They had among them the greatest medical school, not only of this country, but of Europe; which had every prospect of an increasing prosperity, and must give life and energy to every medical institution connected with it. But best of all, they maintained a social position singularly favourable to freedom of sentiment and liberality of conduct, inasmuch as they were not pressed down by *stratum super stratum* of wealth, rank, and title; but practised a profession which stood so high in public respect, as to prevent them, in their social intercourse, from

[1] This suggestion was formally adopted during the evening.

ever suffering that painful sense of inferiority in station which elsewhere had, probably, in no small measure, contributed to the back-slidings of their brethren. He thought that the possession of all these advantages rendered it peculiarly incumbent upon them, to exert every effort in their power for the good of the profession; and he trusted that the Medico-Chirurgical Society would always prove a powerful instrument for this purpose.

Connection between Anæmia and Goitre. By Dr. Begbie.—This paper led to a short, but interesting conversation.

Spontaneous Cure of an Ovarian Tumour. By Professor J. H. Bennett.—In a woman admitted into the Royal Infirmary, the contents of an Ovarian tumour had found its way, by ulceration, into the bladder. The cure was completed by the subsequent application of pressure, so as to cause evacuation by bladder and urinary passages of the contents of the cyst.

MISCELLANEOUS INTELLIGENCE.

Election of Sir D. Brewster to the National Institute of France.—At the sitting of the Academy of Sciences on the 2d of January, Sir David Brewster, who had been for twenty years one of the *fifty* corresponding Members of the Institute, was elected one of the *eight* Associate Members of that body, a vacancy having arisen from the death of the celebrated chemist, Baron Berzelius of Stockholm. The illustrious traveller and philosopher, Baron Humboldt, has long stood at the head of this list. When a vacancy takes place in the list of Associate Members, a Commission, consisting of the President and six Members from different sections, is appointed to select the candidates, and, after discussing their claims, to arrange them in the order of preference. The candidate recommended by the Commission is placed on the first line, and the rest in alphabetic order. Sir David Brewster was unanimously placed on the first line, and was elected by an immense majority. The other candidates were, Baron Liebig, Sir John Herschell, Bart., M. Mitscherlich of Berlin, M. Ehrenberg of Berlin, M. Melloni of Pavia, and some others. The honour thus conferred on the distinguished Scotchman is thus announced in *La Presse*:—

"At the sitting of the Academy of Sciences on the 2d January, Sir David Brewster was elected one of the eight foreign Associate Members of the National Institute of France, vacant by the death of the celebrated chemist, M. Berzelius. This honour, coveted by the most illustrious philosophers of Europe, and of the whole world, is conferred by the Academy only after a rigorous examination of the scientific claims of the candidates, who are proposed to the Institute by a Commission of five Members, of which M. Arago was on this, as on former occasions, the reporter. The *eight* Associate Members of the Institute are generally regarded as the eight greatest celebretes in the learned world. We shall soon give a detailed account in this journal of the discoveries of Sir David Brewster, who, from the Kaleidoscope to the law of the Angle of Polarization, the physical laws of metallic reflections, and the optical properties of crystals, is the author of an immense number of facts and practical applications, in every branch of optics."

Cholera at the Pauper Children's Establishment, Tooting.—The occurrence of Asiatic Cholera among the children in Mr. Drouet's Establishment for Poor Children, at Tooting, containing 1400 inmates, has excited much attention. Cases of diarrhœa seem to have occurred to a greater extent than usual for two or three weeks; but these did not attract notice, until, on Friday the 29th of December, several of the cases assumed the form of cholera. Measures were promptly taken for arresting the progress of the

disease, by removing numbers of the children to the different parishes from which they had been sent, and by increasing the medical staff of the establishment. Mr. Grainger visited the institution, by order of the Board of Health, and made an elaborate report, condemnatory of the overcrowded, ill-fed, and badly-clothed state of the children, as well as of the inefficient attendance of nurses, and the defective supply of pure air—there being sources of malaria in the neighbourhood. Mr. Carter, coroner for East Surrey, declined to hold any inquest on the children who died at Tooting, alleging that the cause of death was known; but lengthened inquests have been held by Mr. Wakley, or by the deputy-coroner, Mr. G. J. Mills, on those who have died after removal to the St. Pancras Workhouse, Royal Free Hospital, and other places. The general tone of the verdict has been condemnatory of the conduct of Mr. Drouet, and of the guardians of the unions who placed their children under his care, without sufficiently inquiring into the accommodation and treatment they were likely to receive, or taking measures to remedy it, when it appeared faulty. In the case of four children belonging to the Holborn Union, who died at the Royal Free Hospital, the jury have returned a verdict of manslaughter against Mr. Drouet; together with a censure on the conduct of the authorities of the Holborn Union. The farming of pauper children at starvation prices, is a system so atrocious, as to demand immediate suppression by the Executive. Poor-law guardians have been long ago proved to be ignorant of what common humanity would dictate to other people. Their proceedings, within the last few years, have done much to disgrace the national character. The total number of cases which occurred at Tooting, up to the 20th of January, since which no fresh cases have been reported, is 360, of which 150 terminated fatally; at St. Pancras, 180 cases, and 10 deaths; at the Royal Free Hospital (Holborn), 30 cases, and 4 deaths; at the Strand Union, 25 cases, and 2 deaths; among the children from the Islington Union, at Hackney, 30 or 40 cases, and 4 or 5 deaths; at Kensington, about 20 attacked, and 1 death. At the Wandsworth and Clapham Unions, a large number have been attacked; and at St. Mary's, Newington, a similar state of things has existed. And thus it appears that from 700 to 800 children, or more than half the number in Mr. Drouet's establishment, have been attacked with cholera, and in about 200 cases it has terminated fatally.

The Serpentine.—A meeting of numerous respectable inhabitants of Chelsea and the vicinity of Hyde Park, took place at the Literary Institution, Cadogan Gardens, on the 16th of January. Dr. Copland in the chair. A deputation, consisting of the Chairman; Mr. Lilwall, the Honorary Secretary; Dr. J. A. Wilson, Senior Physician to St. George's Hospital; Drs. Goolden, Hodgkin, Pettigrew, Lancaster, Tilt, Messrs. Woolley, Erbling, etc., were appointed to form a deputation to wait upon the Commissioners of Woods and Forests, on an early day, to represent the noisome condition of the Serpentine, and to learn what plans the Commissioners proposed to adopt for remedying the evil. The same gentlemen will also form a permanent Committee, entrusted with watching the progress of the measures intended to be put in force. Amongst the votes of thanks passed, was one to the Editor of the *Lancet*, in just acknowledgment of the services rendered by that journal, in the endeavour to effect an alteration in the present condition of the Serpentine.

Appointments.—Dr. John Topham has been elected Physician, and E. F. Dehane, G. Edwards, and J. T. Cartwright, Esqs., Surgeons, to the South Staffordshire General Infirmary, Wolverhampton.

Mr. Heane was elected Surgeon to the Suffolk General Hospital, Bury, on Jan. 16.

Dr. G. S. Jenks has been elected Physician to the Sussex County Hospital, Brighton, in the room of Dr. Blair, resigned.

M. Berard, Professor of Physiology at the Faculty of Medicine, Paris, has been appointed Dean of the Faculty, in the room of M. Bouillaud, who has been superseded.

M. Velpeau has been elected President, M. Bricheteau, Vice-President, and M. Gibert, Secretary, of the Académie de Médecine, Paris, for the year 1849.

Matthew Talbot Baines, Esq., has been appointed Poor-Law Commissioner for England, in the room of the late Charles Buller, Esq.

John Flint South, Esq., the Translator of *Chelius's Surgery*, and one of the Surgeons of St. Thomas's Hospital, has been elected a Member of the Court of Examiners of the Royal College of Surgeons in England, in the room of the late Samuel Cooper, Esq.

William Fergusson, Esq., F.R.S., Professor of Surgery in King's College, has been elected Consulting Surgeon to the Hospital for Consumption, in the room of Mr. Liston, deceased.

John Bleeck, Esq., has been appointed Surgeon to the Bristol Gaol, in the room of George Hetling, Esq., resigned.

Samuel Gaskell, Esq., F.R.C.S., late Superintendent of the Lancaster County Lunatic Asylum, has been appointed, by the Lord Chancellor, a Commissioner in Lunacy, in the room of the late Dr. Prichard.

M. Boussingault has been appointed, in rotation, President of the Académie des Sciences, Paris; and M. Duperrey, Vice-President, for the year 1849.

Obituary.—January 4, aged 41, William Pares Baker, Esq., surgeon, of Bow, Middlesex.—Jan. 9, at Colchester, aged 57, William Byass, Esq., surgeon, late of Worthing.—Dec. 5, at his residence in Wimpole-street, Dr. Clendinning, F.R.S., in the 51st year of his age.—Dec. 2, at Shepperton, Middlesex, aged 67, Samuel Cooper, Esq., F.R.S., late President of the Royal College of Surgeons, and Professor of Surgery in University College, London.—Dec. 20, at Brighton, aged 66, Dr. George Drysdale, R.N. —At Glasgow, suddenly, while actively engaged in attendance on cholera patients, Dr. Gray.—Dec. 19, at Cheltenham, aged 77, William Greaves, Esq., M.D., late of Mayfield Hall, in Staffordshire.—Dec. 29, in Finsbury Square, aged 68, William Martin, Esq., surgeon, R.N.—Dec. 26, at Oxford, Charles Lewes Parker, Esq., M.A., surgeon to the Radcliffe Infirmary.— Jan. 14, in Portland Road, aged 56, John Pratt, Esq., surgeon.—Dec. 22, in Russell Square, aged 62, Dr. James Cowles Prichard, one of the Commissioners of Lunacy, and author of the "Physical History of Man," and other works.—Dec. 20, aged 49, Thomas South, Esq., of Judd-street, Brunswick Square.—Lately, at Dumfries, of cholera, Dr. Templeton, late of Annan. —Dec. 30, at Altrincham, Cheshire, aged 66, Samuel Hibbert Ware, Esq., M.D., F.R.S.E., etc.—At St. Petersburg, aged 92, Dr. Zagorski, member of the Academy of St. Petersburg, and Professor of the Medico-Chirurgical Society. He was celebrated for his attainments in anatomy and physiology.

BOOKS RECEIVED.

Allen's Plain Directions for the Prevention and Treatment of Cholera. Oxford: 1848.— Clendon on Chloroform in Dental Surgery. London: 1849.—Coleridge on Life. Lon don: 1848.—Duke on Cerebral Affections of Children. Dublin: 1849.—Ellis, Demonstr tions of Anatomy. Part I; 2nd edition, re-written. London: 1848.—Gillkrest, Choler Gleanings. Gibraltar: 1848.—Johnson, Ren, from Todd's Cyclopædia. London: 1848.— Jones (William) on Diseases of Women, with Description of a Novel Invention. Londor 1848.—Mayne on Scientific Nomenclature. London: 1849.—Medical Directory for 18 London: 1849.—Milroy, Cholera not to be arrested by Quarantine. London: 184 Rogers on Cholera. London: 1848.—Skiers on Diarrhœa, Dysentery, and Cholera. don; 1849.—Tomes on Dental Physiology and Surgery. London: 1848.—Transac of Provincial Medical Associations. Vol. xvi. Part I. 1848.

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ORIGINAL COMMUNICATIONS.

ON THE STRUCTURE OF THE SYNOVIAL MEMBRANE COVERING THE SURFACE OF ADULT ARTICULAR CARTILAGE.[1]

By JOSEPH TOYNBEE, Esq., F.R.S., Fellow of the Royal College of Surgeons in England; and Surgeon to the St. George's and St. James' Dispensary, London.

FROM the period when the structure and relations of the animal tissues first attracted the attention of anatomists, great diversity of opinion has continued to exist on the subject of the organization of the joints.

For a long time, the most opposite views were entertained respecting the essential nature of Articular Cartilage. Some anatomists held that it was vascular; others, while allowing it to possess vessels, restricted them to those conveying white fluids; a third party contended that it contained no vessels whatever; and a fourth, that it presented no one trace of organization. Several years ago, in a paper published in the Philosophical Transactions,[2] I endeavoured to prove that articular cartilage should be classed with those animal tissues which are nourished, grow, and are liable to certain diseases, though deprived of the presence of blood-vessels. It is a source of great satisfaction to me, that since the publication of the paper alluded to, other investigators have found their researches tend to the same conclusion, and that there is a general recognition of the fact, that articular cartilage and the non-vascular organs differ from all others by drawing their nourishment from vessels ramifying in their immediate vicinity, but not permeating through them. One subject, however, of great interest to the surgeon and the pathologist, still remains to be investigated, and that is, the causes of the introduction of blood-vessels, during disease, into the articular cartilage and non-vascular tissues, and the explanation of various phenomena connected with the peculiarities of their organization. Little progress, however, in this department of pathological investigation can be

[1] An abstract of this paper was read, and the illustrative preparations exhibited, at the meeting of the Pathological Society of London, on the 16th of January, 1849.

[2] Researches tending to prove the Non-vascularity and the peculiar uniform mode of Organization and Nutrition of certain Animal Tissues. Part II. 1841.

expected, until another question, concerning the anatomy of the articulations, has been satisfactorily settled. I allude to the relations which subsist between the synovial membrane and articular cartilage; a point which has given rise to much diversity of opinion. Bichat affirmed that synovial membrane did cover the surface of articular cartilage; but he appears to have arrived at this conclusion rather by analogical reasoning than by actual demonstration. Sir Benjamin Brodie agrees with the view of Bichat, which his pathological researches tend to corroborate. He says: "where it (the synovial membrane) is reflected over the cartilage, it is thin and readily torn; its existence, however, even here, may be always distinctly demonstrated by a careful dissection."[1] It might be supposed, that by the aid of the microscope, this question would have been decided ere now; this, however, is not the case, for difference of observation has given rise to difference of opinion among microscopical observers. Thus, Henle, writing in Müller's *Archives*, in 1838, says: "the epithelium is continued in a thinner layer over the articular surfaces of the cartilage, on which it is separated from the cartilage corpuscles by a thin layer of cellular tissue." Professors Todd and Bowman, in their recent valuable work on physiology, make the following statement in opposition to that which has just been quoted:—"It (the synovial membrane) may be traced to the edge of the cartilage; to this, it is very intimately adherent for some little distance, beyond which, it cannot be followed where the cartilage has been exposed to pressure during the motions of the joint."[2] In the paper, in the Philosophical Transactions, to which reference has been made, I gave the particulars of a dissection of the knee-joint of a fœtal calf, where I removed the synovial membrane from very nearly the entire surface of the articular cartilage, covering one condyle; to which it was attached by a considerable layer of cellular tissue, containing the ramifications of blood-vessels.

Professors Todd and Bowman do not dispute, that in the fœtus the synovial membrane is continued over the whole of the free surface of the cartilage. It requires, indeed, but a superficial examination to convince any competent observer of the correctness of that view. The question alone, to which any interest can therefore attach, is what becomes, in adult life, of the synovial membrane which is acknowledged to have covered the cartilage in the fœtal period. Is it absorbed, or is it, as some writers have conjectured, worn away by attrition; or does it become incorporated and perfectly blended with the cartilage? It appears to me, that not one of these views is correct, and that there is no difficulty in demonstrating, fully and satisfactorily, the persistence of the synovial membrane during every period of life, and its complete envelopement of the free surface of articular cartilage, so long as the latter continues in a healthy condition.

If the synovial membrane, which surrounds the border of adult articular cartilage, be traced to the margin of the latter, it will be found to adhere very firmly; and, should an attempt be made to tear it from the surface of the cartilage, it will often give way; in some parts, how-

[1] Pathological and Surgical Observations on the Diseases of the Joints, p. 7. 1836.
[2] The Physiological Anatomy and Physiology of Man, p. 127.

ever, and that not unfrequently, a continuation of this synovial membrane will be separated by laceration, in the form of a thin transparent layer, from the surface of the cartilage to the extent of several lines. In some specimens, I have retained this transparent membrane continuous with the thicker and opaque synovial membrane surrounding the cartilage. Another mode of showing the presence of this delicate tissue on the surface of articular cartilage, is to make a very thin flap of the latter, parallel with its surface, and then, by means of a pair of broad-pointed forceps, to draw it gently, but firmly, in the same direction as that of the section. As a general result of this process, it will be found, that a layer of transparent membrane, varying from two lines to half an inch in length, will peel from the cartilage. A third way of demonstrating the existence of this membrane, is to place a portion of articular cartilage under water, and to scratch its surface with the sharp point of a firm needle till a fine membrane is observed to be lacerated, under which, the needle may be introduced, and by careful manipulation, the adhesions between it and the cartilage may be broken, and considerable portions detached.

The question now to be considered is, whether this fine tissue, so detached, is the synovial membrane? When examined by a magnifying power of 500 diameters, portions of it which have been removed from the circumference of the cartilage, or parts which have not been subjected to much pressure, appear to be translucent, and interspersed throughout with fine filamentous lines, resembling in character areolar tissue. This appearance may be seen in Figure 1. If a portion of the membrane, taken from the central part of the cartilage, be examined with the same magnifying power, scarcely any appearance of this areolar tissue will be detected, and it will be found translucent, with a nearly homogeneous structure.

Figure 1.

Figure 2.

Adherent to its inner or cartilage-surface, however, numerous fine points may be observed, as seen in Figure 2, which appear to be particles of cellular tissue that have been lacerated in the process of separating it from the cartilage. Sometimes a portion of the membrane, taken from the central part of the cartilage, will present but few of the above-described points; but upon its inner surface very shallow depressions will be observed, corresponding exactly in size and shape with the corpuscles of articular cartilage over which they have been placed, and against which they have been firmly compressed in Fig. 3. In other instances, one or more of the cartilage-corpuscles are torn away, one may be seen to adhere to the inner surface of the membrane in Fig. 3.

Figure 3.

The free surface of this membrane is smooth, and presents a very fine polish, to which is owing the glistening

appearance of cartilage, which it loses the instant it is denuded of this membrane.

That the tissue just described is not a layer of cartilage, seems to be clear, from the fact of no corpuscles being found in it; from its extreme and yet uniform softness and tenuity, the latter being so great that the membrane folds upon itself when floating in a few drops of water; from the facility with which it is separated from the surface of the cartilage itself, without the necessity of using any cutting instrument; and, lastly, from the circumstance that it is visibly continuous with the synovial membrane around the joint. The only fact which seems to militate against its being considered as synovial membrane, is the absence from its surface of epithelial cells. The absence of the epithelial layer may, however, be accounted for, perhaps, from the facts that it is not, like the reflex synovial membrane, a secreting organ, and from its being subjected to great pressure; nor can the absence of it be deemed a sufficient reason for denying that the tissue described is synovial membrane, in the face of so many cogent reasons for identifying it with that membrane.

The conclusion to which I have been led is, that all healthy articular cartilage is invested with synovial membrane, which membrane, however, differs from the condition in which it is ordinarily met with, in being deprived of an epithelial layer.

If this conclusion be correct, it will, I think, appear, to those who have studied the diseases of articular cartilage, that it may lead to more precise views than heretofore of the process of ulceration, and the *modus operandi* of that change.

Postscript.—In confirmation of the view advanced in the above paper, it may be added, that at the meeting of the Pathological Society, when an abstract of this communication was laid before its members, Dr. Garrod stated, that upon a careful examination of some specimens, where gouty deposit existed on the surface of articular cartilage, he found this deposit covered by a fine membrane. Dr. Garrod has been so kind as to furnish me with one of his specimens, and having submitted it to microscopic observation, I find that it quite agrees in its structure with the membrane of which the description is given above.

12, Argyle Place, St. James', January 1849.

CASE OF MELANOTIC CANCER OF THE SCROTUM.

By T. B. CURLING, Esq., Lecturer on Surgery at the London Hospital.

EXCISION OF THE MORBID PART—RETURN OF THE DISEASE—DEATH IN SIX YEARS AFTER THE OPERATION.

Mr. G., a cabinet-maker, aged 32, enjoying tolerable health, consulted me in November 1842, on account of a fungous growth on the Scrotum. The tumour was about the size of a small walnut and of a dark colour: it had an irregular granular surface, and was attached to the left side of the scrotum by a narrow peduncle or neck. About an inch on one side of this tumour, I observed a small dark spot, apparently produced by some black deposit beneath the epidermis, raising it a little above the

surrounding surface. The patient stated that the fungous growth was first noticed about three months before, when it resembled the little speck just described, which had been observed only a fortnight. It had increased rapidly of late, but gave no pain. The shirt was discoloured by a slight discharge and bloody marks. There was no enlargement of the glands in the groins. I excised the tumour and small speck near it, including a portion of sound scrotum. On making a section of the morbid growth, the fungus appeared to spring from the cutis. Its base was hard and of a scirrhous character; but the projecting part was soft and easily broken down. Small irregular spots of melanic pigment were observed on the cut surface, as well as on the exterior of the tumour, and the little speck seemed to consist of a similar matter deposited immediately beneath the epidermis. The wound healed favourably and quite closed in a fortnight.

May 31st, 1843, about eighteen months after the operation, I was requested to see Mr. G., in consequence of a return of the disease. On examination, I found three black specks in the vicinity of the cicatrix, on the left side of the scrotum. These had been observed only three or four days. As he complained of uneasiness in the left groin, I examined the part, and found some glands slightly enlarged and indurated. Thinking it possible that the enlargement might not be of a specific character, I directed the *ceratum hydrargyri c.* to be applied. I saw my patient next on the first of the following September. The glands in the groin had then increased in size and were very hard. I afterwards lost sight of Mr. G., until March 11th, 1844, when he called again to consult me. I found a firm indurated mass, about the size of an almond, implicating the cicatrix in the scrotum. There was an enlargement of inguinal glands, forming a tumour the size of an orange, and a smaller swelling the size of a hen's egg just below it. He suffered a good deal of pain in the part, but was able to continue at his occupation. His general health seemed slightly impaired. After this visit, I saw no more of my patient for more than four years.

On the 10th of October last, (1848), I was requested to visit him. I found him lying in bed and suffering a good deal of pain from the tumour in the groin, which had increased to the size of a very large cocoa nut. It was of a rounded form, smooth, soft, and had an elastic feel. The skin covering it was mottled, and of a dark livid colour. The induration in the scrotum had increased very little, but there was a cord extending from it to the inguinal tumour. It appeared that he had continued at his occupation until about three months back, when, after some more exertion than usual, the tumour became more painful and rapidly enlarged, and in a few weeks doubled its previous size. Up to this period he had enjoyed tolerable health, and had latterly gained flesh; but since the attack of pain and change in the tumour, he had become thinner and weaker, and had been confined to the bed or sofa. His stomach also had become irritable, and his digestion impaired. Bowels costive. I ordered the dilute hydrocyanic acid, and opiates at night, which afforded him relief; and the bowels to be kept open by injections or a mild aperient pill.

November 23, I was sent for at 9 A.M., in consequence of his having been seized with severe pain in the abdomen. I found no abdominal

tension nor tenderness on pressure, but about every ten minutes he was attacked with violent pains in the abdomen, attended with straining as if at stool. The pains were always brought on by taking food into the stomach. They had lasted some hours, and distressed him extremely. His countenance was anxious—his pulse quick and thready. His bowels had been relieved the day before. Suspecting that these pains were caused by some tumour developed within the lower part of the colon or in the rectum, and exciting spasmodic action of the larger bowel, I ordered an injection containing forty drops of laudanum, and poppy fomentations to the abdomen, and allowed the patient to take only milk with a small quantity of brandy in it, in spoonfuls. Shortly after the injection, the pains subsided; but they returned after an intermission of six hours, though less violently than before. They were again relieved by an opiate injection, which it was found necessary to repeat on the two following days.

November 25th, I was sent for in haste at 9 P.M., in consequence of hæmorrhage having taken place from the bowels. It appeared that whilst asleep, he was disturbed by a sensation of something having suddenly given way in his inside, which was followed almost immediately by an evacuation. I found that about 12 to 14 oz. of blood had escaped at the anus, which was also blocked up with coagulum. The patient was cold, clammy, and faint. Napkins wrung in cold water were applied to the part, and I gave him some cold brandy and water with a little laudanum in it. No further bleeding occurred for some hours, but he continued to pass small quantities of blood in his stools, and gradually getting weaker, died December 7th. During the last few weeks, the inguinal tumour had remained stationary and caused very little uneasiness.

The body was examined thirty hours after death. The heart and lungs were quite healthy. The liver, spleen and pancreas were also sound. The kidneys were pale and the cortical structure slightly atrophied. A few of the mesenteric glands were slightly enlarged, but not carcinomatous. The lumbar glands were very little enlarged, but quite black. On minute examination, they were found to consist of nucleated cells containing black pigment. The colon was loaded with lumps of hardened fæces, and the rectum was blocked up with fæcal matter, which, at the lower extremity of the gut, was tinged with blood. Near the termination of the anus, there were two superficial ulcers about the size of a fourpenny piece. There was a small portion of carcinomatous deposit, slightly tinged with black pigment, in the cellular tissue of the scrotum, and connected with the cicatrix. The tumour was composed of a mass of carcinomatous matter, of a soft encephaloid character, which, at one part, had nearly made its way through the skin. A good deal of this matter was dead cancer tissue, particularly towards the surface. Some large veins filled with dark coloured coagula traversed the tumour. The abdominal muscles were involved in the disease, but it caused no internal tumour. Below the tumour, but closely attached to it, there was a large carcinomatous gland, which was imbedded in the upper part of the thigh. The skin investing the large tumour was tinged of a livid or dark brown colour.

The case, which I have just related, presents several features of

interest. It may be noticed as remarkable, and as contrary to our experience of the progress of melanosis, that the disease having reappeared at its original seat, and also in the groin, so early as six months after the operation, should subsequently have advanced so slowly, that after lasting six years, the only internal parts affected, were the lumbar glands, and these only in a very slight degree. When the return of the disease was first remarked, I had considered the propriety of excising the diseased portion of scrotum and dissecting out the enlarged gland from the groin; but the results of operations for melanosis have been so discouraging that I was not disposed to suggest a fresh operation at once, and the patient neglected calling on me again, until the disease seemed too fully established in the system to justify any further use of the knife. This case is also interesting as confirming what has been remarked by pathologists in regard to the connection between melanosis and cancer. There was both cancer and melanosis in the scrotum; encephaloid cancer in the groin, and pure melanosis of the lumbar glands. It is a question with pathologists whether melanosis should be considered a carcinomatous disease; and Dr. Walshe, in his work on Cancer, gives no description of it, but briefly states his reasons for not regarding it as a form of cancer. I must, however, dissent from this view. It is true that the most marked character of melanosis arises from the presence of a black pigment, and that it generally originates in parts where black pigment commonly exists, as in the skin and eye. Black pigment may be deposited, also, in parts, independently of any cancerous formation. Nevertheless, I believe that Laennec was right in considering melanosis as a variety of cancer.[1] The detection of nucleated or cancer cells in all cases of true melanosis in which they have been sought for, and the constant occurrence of secondary formations, sometimes of a similar character, at other times of cancer without the pigment, seem to me to establish its claim to be regarded as a genuine cancerous disease; whilst the addition of the black pigment to the cancerous matter, its prevalence throughout the body, and abundant, indeed, extraordinary development in parts where no pigment exists in their healthy state, gives to this form of the disease peculiar characters, well entitling it to be distinguished from other forms of cancer. Carcinomatous disease originating in the skin, such as chimney-sweeper's cancer, cancer of the lip and eyelids, rarely leads to internal secondary deposits; whereas, melanosis commencing in the skin, is so constantly followed by secondary formations in numerous parts of the body, that an operation for its permanent eradication, even at an early period, is regarded as almost hopeless. This, then, is another distinguishing feature, and, as I have already remarked, a peculiarity in the case I have related was the limitation of the melanotic deposit to the lumbar glands. Notwithstanding the naturally dark colour of the skin of the scrotum, this is the only instance of melanosis occurring in this part, with which I am acquainted.

The immediate cause of death was the hæmorrhage from the ulcer in the mucous membrane of the rectum, and it may be doubted whether this lesion was the direct result of the original disease, for which the patient came under my care.

[1] This opinion has been adopted by Dupuytren, Cruveilhier, Müller, and others.

CLINICAL OBSERVATIONS ON THE PATHOLOGY AND TREATMENT OF THE DROPSY WHICH FOLLOWS SCARLET FEVER.

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THE object which the author of this paper has in view, is to contribute to the natural history of an interesting, and sometimes irremediable disease, viz., the Dropsy[1] following Scarlet Fever; and to indicate the most suitable treatment, both for the cure and the prevention of this affection. Its natural history will be illustrated by an historical exposition of the antecedent, concomitant, and subsequent circumstances, of twelve cases carefully observed.

In order to obviate the necessity of much repetition, and to facilitate reference, the cases are numbered. The following table presents the character of each case, in connexion with a few leading points, viz., fever, eruption, desquamation, dropsy, albuminuria, and result; and serves to give a bird's-eye view, of the cases under analysis.

TABLE OF TWELVE CASES OF DROPSY AFTER SCARLET FEVER.

No.	Name.	Age.	Fever.	Eruption.	Desquam.	Dropsy.	Albuminuria	Result.
1	Eliza Finch	7	General, inflammatory.	Bright, general.	Extensive.	General.	Much albumen.	Recovered
2	M. Edwards	12	Ditto.	Ditto.	None.	Slight (face only).	Very little.	Ditto.
3	Hen. Finch	4	Ditto.	None, according to mother.	General.	General.	Not sought for.	Ditto.
4	Chas. Fairy	1	Ditto.	None.	None.	Ditto.	Much albumen.	Ditto.
5	John Stacey	4	Ditto.	Bright, general.	General.	General (empyema).	None.	Died.
6	Chs. Childs	4	Ditto.	None.	None.	General.	Ditto.	Ditto.
7	Fred. Cook	6	Ditto.	Bright, general.	Slight (face only).	Ditto.	Considerable.	Recovered
8	Edw. Cook	5	Ditto.	Ditto.	General, persistent.	Ditto.	A trace.	Ditto.
9	Henta. Ford	4	Ditto.	Ditto.	Ditto.	Slight (face only).	None.	Ditto.
10	Geo. Cator	3	Ditto.	Ditto.	Ditto.	Do. (face & feet only).	Very little.	Ditto.
11	M. A. Ford	8	Ditto.	Ditto.	Ditto.	Do. (face only).	Not sought for.	Ditto.
12	C. Milbourn	6	Ditto.	Ditto.	None.	Do. (face & feet only).	None.	Ditto.

These twelve examples of Dropsy following Scarlet Fever, form only a very inconsiderable portion of the cases which have occurred in the author's practice, during the last fifteen years; and they are selected for review here, in preference to others, because they were narrowly

[1] For convenience, the more general term Dropsy is here made use of, to embrace every form of watery effusion into the cellular tissue, and shut sacs of the body. The words Anasarca and Œdema are used in their strictly limited sense.

watched, and laboriously recorded, as materials for future comparison and analysis. They came under the care of the writer in his late capacity of physician to the Northern Dispensary, and embrace all the cases of the disease which fell to his charge from June 1844 to January 1845, both months included; during which period the parent disease, scarlet fever, prevailed in the metropolis to a very great extent.

Instead of giving a detailed and separate history of each case, the writer has thought it better to treat each point of interest in connexion with the whole group of cases. In this way, the facts of each case will not only be elicited, but presented in a prominent manner, and after the numerical method. The reader will thus be enabled to form a ready decision as to the comparative frequency of certain symptoms and occurrences. Considerable labour has been undergone in noting down the facts at the time, and in subsequently arranging them in a statistical form. Some omissions have unavoidably occurred; and, in a few instances, some minor facts, not likely to be mistaken, in connexion with the history of the cases previously to their coming under the eye of the writer, have been given on the testimony of parents, and may be relied on as, on the whole, worthy of credence.[1]

The *previous health* had been sound in eight of the patients; and delicate in four, only one of whom (No. 3), suffered a severe attack of anasarca. The *habit of body* in three of the cases, was decidedly strumous. Two of these (Nos. 1 and 3), were brother and sister, and had dropsy in a severe form. The *comforts of life* were enjoyed to a large extent by ten of the patients, considering their position in society. They had comfortable warm homes, sufficient and wholesome food, and had been carefully attended to by their parents. Miserable destitution was the lot of one child (No. 6), who had general anasarca, and who subsequently died. One (No. 4), who had general dropsy, with bloody urine, was the subject of maternal neglect and recklessness.

The ages of the twelve patients are shown in the following table.

Years	1	2	3	4	5	6	7	8	9	10	11	12
Number of Cases	1	0	1	4	1	2	1	1	0	0	0	1

Relationship between the patients.—Six of the patients were brothers and sisters, belonging to three different families: those in each of the three families suffered much in the same manner, and to the same extent.

Sex.—Eight of the twelve patients were boys; four were girls, o. whom only one suffered dropsy to a great extent.

Season.—The greater number of cases occurred in summer and autumn. Three occurred at the beginning of winter. One of the fatal cases occurred in August, the other in October.

Period of Eruption and Desquamation.—The *eruptive fever*

[1] It was the intention of the author to have presented the following facts to the notice of the profession before this time; but circumstances have prevented this from being accomplished, and they are now reduced to the present form, at a period when his avocations afford him but little leisure. The plan and limits of this paper do not admit of references to the important contributions of other authors on the same subject; but as the author claims no originality, it is hoped that their omission will not prove the ground of offence to any one.

was smart and moderately inflammatory in all the patients. The *eruption* was not observed in three cases (Nos. 3, 4, and 6), of which all were remarkable for their severity, and one for its fatal termination. In case No. 4, the writer observed general and persistent desquamation; the evidence respecting the non-appearance of the eruption was derived from the mother, an intelligent woman. In nine cases, the eruption came out in the usual manner, was bright and distinct, and general over the surface of the body: it remained out the usual time, and declined in the ordinary manner.

The *fauces* were affected in eleven cases; in the twelfth, it was doubtful whether or not they were affected. In the eleven cases, there was considerable inflammation, accompanied by swelling; but in none of them did ulceration or sloughing occur.

The *lymphatic glands* of the neck were considerably swollen in three moderate cases of dropsy; and much swollen, with an abscess as large as a hen's egg, in a severe case. In two moderate cases they were healthy. No mention of their condition is made in six cases.

The *mucous membranes* were in a state of considerable irritation in ten cases. In two very moderate cases, they are reported to have been healthy.

The *quantity of urine* passed during the eruptive fever, was ascertained, in almost every case, to be decidedly scanty. In three cases, (Nos. 7, 8, and 10), the subjects of which were under the writer's eye from the period of the first invasion of the parent disease, the urine was scanty during the eruptive fever; and, immediately before the period of effusion, it decreased remarkably in quantity, almost to total suppression.

Desquamation of the cuticle did not take place in four cases, viz., Nos. 2, 4, 6, and 12. In two of these cases there had been no eruption; in the other two, it had come out freely. In all the other cases desquamation occurred. It was confined to the face in No. 7, a case of general anasarca; and was general in the other cases, of which Nos. 3 and 5 were remarkable for the severity of the dropsical effusion. The integuments felt rough and hard, and communicated to the touch a sensation of resistance, like parchment. The cuticle came away in large scales, rather thick, and of a darkish colour. The desquamation occurred from time to time, during a period of two or three weeks; this was particularly observed in Nos. 9, 10 and 11, all cases of very slight dropsy; and in No. 8, a case of general dropsy of the cellular tissue. In No. 3, a case of non-eruption, the author observed desquamation of the cuticle. It is very probable, that, in this case, an eruption had occurred; but that it had been so slight, and short in duration, as to have escaped the observation of the mother. Yet, as no eruption was observed, the case is put down as one of non-eruption.

Relative dates of Desquamation and Dropsy.—In case No. 1, desquamation and dropsy were found at the first examination, and were concurrent throughout. In No. 3, dropsy began five days before desquamation. In No. 5, desquamation took place before dropsy, and had ceased before death. In No. 7, desquamation began a few days before dropsy, as also in Nos. 9 and 11. In No. 8, desquamation began eight days before dropsy, and was concurrent throughout with dropsy. In

No. 10, desquamation commenced nine days before dropsy, and accompanied it throughout.

State of the blood.—The blood was found to have a buffy coat in No. 7, a case complicated with pericarditis; the specific gravity of the serum was 1025. In No. 10, the specific gravity of the serum was 1025 on the thirteenth day after the commencement of the disease; a moderate degree of œdema of the face and feet appearing at this time. There was, in this case, very little albumen in the urine, but extensive and persistent desquamation.

Complications during the eruption.—In No. 7, pericarditis supervened, and arthritic pains were experienced in the wrists and ancles; the same affection of the joints occurred in No. 8.

The *condition of the vital powers* of each case, when first seen, is given in the following list.

1. Considerable power; circulation excited.
2. Considerable power; circulation not rapid.
3. Some power; circulation rapid.
4. Some power; pulse 120.
5. Exhausted; pulse 140.
6. Exhausted; pulse 120.
7. Some power; pulse 80.
8. Some power; circulation rapid.
9. Considerable power; circulation quiet.
10. Some power; pulse 140.
11. Considerable power; pulse 100.
12. Considerable power; pulse 120.

Period of Dropsical Effusion.—The dates of the appearance of the Dropsical Effusion, and other particulars, will be found in the following table. *(See next page.)*

The *blood* was cupped and buffed in case No. 1, the only one in which blood-letting was employed during dropsy. The specific gravity of the serum was 1025.

Complications during Dropsy.—In No. 1, there was partial coma, with intermittent pulse. In No. 4, hæmaturia occurred. In No. 5, there occurred pericarditis, pleuritis, and inflammation of the tunica vaginalis of the left testis, with sero-purulent effusion in the pericardium, right pleura, and tunica vaginalis. In No. 7, there was excitement of the heart's action, after symptoms of pericarditis, followed by very small and sometimes imperceptible pulse at the right wrist, with sensation of faintness.[1] In case No. 8, syncope occurred, with pulse weaker at the right wrist than at the left. The symptoms in No. 12 were complicated with arthritis.

Results.—Complete recovery took place in ten cases. Death occurred in two only, viz., Nos. 5 and 6, both of which were much exhausted when first seen by the writer.

Examination of the Body after Death was made in the two fatal cases. In the case No. 5, no fluid was found in the cellular tissue, the whole effusion having been removed before death. A few loose white fibrinous bands connected the pleura costalis with the pleura pulmonalis, on the left side. The cavity of the right pleura was filled with

[1] The difference in the pulse at the two wrists, in this and the following case, was well marked. The same circumstance has been noted by the author in other children, whose powers of life had been considerably reduced under scarlet fever. Perhaps the smaller development of the pulse in the right wrist may be due to its somewhat greater distance from the enfeebled heart, or to the additional break in the current of blood, produced by the subclavian artery of the right side coming off from the innominate.

TABULAR VIEW OF THE APPEARANCE OF DROPSY, ALBUMINURIA, ETC.

Cases.	Date of appearance from commencement of disease.	Date of appearance when first seen by the author. (1)	Duration.	Seat.	Average quantity of urine during rise and height of dropsy.	Colour of urine.	Sp. gr. of urine.	Albuminuria. (2)	Date of first discovery of albumen.	Duration of albuminuria.
1	22nd day.	Early date.	3 weeks.	Surface of body generally.	Scanty.	High at first then smoke-coloured; finally pale.	At first, 1025, without albumen; then 1015 with albumen; when albumen disappeared, 1017.	Much.	Several days after appearance of dropsy.	Accompanied dropsy throughout, and disappeared with it.
2	28th day.	7th day.	A few days.	Face only.	Natural.	At first, high coloured; then light.	At first, 1010.	Very little.	Discovered at first examination seven days after appearance of dropsy.	Not found after first examination.
3	16th day.	10th day.	3 weeks.	Surface of body generally.	8 ounces per diem.	Dark, mud-coloured.	At first, 1010.	Not sought for.		
4	14th day.	7th day.	4 weeks.	Ditto.	2 ounces per diem.	At first, smoke-coloured; then blood-red; finally of light amber-colour.	1020, when blood-red.	Much.	Ditto.	Accompanied dropsy throughout, and disappeared at same time with it.
5	Uncertain.	2nd month.	9 weeks.	Surface generally; right pleura; pericardium; left tunica vaginalis.	Scanty.	Deep amber-colour.	1030.	None found.		
6	11th day.	10th day.	3 weeks.	Surface generally; the pleuræ, pericardium, and abdominal cavity.	A few ounces daily.	Not recorded.	1029.	None.		

7	21st day.	2nd day.	2 weeks.	Surface generally.	Very scanty.	At first, smoke coloured; then almost colourless.	1028 at first, with albumen; then 1014, as smoke-colour disappeared, and quantity increased; when urine became copious, 1005.	Considerable. Two or three drops of nitric acid produced a white cloud, which slowly sank a short way, and then disappeared. A larger quantity of acid produced a well-defined precipitate of albumen.	Two days after appearance of dropsy.	Accompanied dropsy throughout, and was last found three days after disappearance of dropsy.
8	19th day.	3rd day.	3 weeks.	Ditto.	Very scanty; scarcely any.	Almost colourless, eleven days after appearance of dropsy.	1010 at first examination, when copious after almost total suppression, but not albuminous; then 1005, when copious, and almost colourless.	A trace.	Fifteen days after appearance of dropsy.	Transitory.
9	17th day.	1st day.	A few days.	Face only.	Usual quantity.	Not recorded.	1020.	None.		
10	14th day.	Ditto.	Ditto.	Face and feet.	Scanty.	Light amber-colour.	1010.	Very little.	A few days after appearance of dropsy in face	Observed only once.
11	23rd day.	Ditto.	Ditto.	Face only.	Not examined.	Not recorded.	Not recorded.	Not sought for.		
12	4th week.	2nd day.	Ditto.	Face and feet.	10 ounces per diem.	High coloured; like lithic acid urine.	1023.	None.		

[1] The cases numbered 2, 7, 8, 9, 10 and 11, had been under the author's care during the primary eruptive fever.

[2] Albumen was sought for, but not found, in the urine of patients Nos. 7, 8, 9 and 10, during the eruptive fever, and before the appearance of effusion. The tests employed were heat and nitric acid.

sero-purulent fluid, of a green colour. The right lung was hepatized and contracted, lying alongside the vertebral column. The pericardium contained about six ounces of sero-purulent fluid. The free portion of the pericardium was of a pink-rose colour, and was covered throughout —as was also the portion investing the heart and roots of the blood-vessels—with much coagulated lymph, giving them a honeycomb appearance. Loose fibrinous bands also connected the two layers of the pericardium. The peritoneal cavity contained four ounces of sero-purulent fluid; and bands of lymph were found on the peritoneum. The kidneys were large and firm, weighing each, upwards of 2 oz.: the cortical portion was somewhat pallid. The cavity of the left tunica vaginalis testis was obliterated, except at one part, where two drachms of sero-purulent fluid were confined.[1]

In case No. 6, the cellular tissue of the surface of the body was extensively infiltrated with serous fluid. An ounce of fluid was found effused in each pleural cavity, and four ounces in the pericardium. The pleuræ and pericardium appeared natural in other respects. The heart was small and flaccid, also pale and blanched, as the healthy heart would be if digested in water for some days. The peritoneum contained eight ounces of limpid serous fluid, the analysis of which will be found below. The kidneys were firm and gorged with blood; and the cortical part was of a deep brick-red colour. The weight of each was one and a half ounces. The bladder contained a few ounces of pale, clear, neutral urine.

ANALYSIS OF URINE TAKEN FROM BLADDER AFTER DEATH.[2]

Water	978·00
Urea	60·92
Hippuric acid, animal extractive, and vesical mucus	1·74
Alkaline salts	7·85
Phosphates and silica	1·39
Loss	·10
	1000·00

ANALYSIS OF SEROUS FLUID FROM ABDOMINAL CAVITY.

Water	96·6
Albumen	2·2
Fatty and extractive matter	·1
Salts, chiefly alkaline	·5
Loss	·6
	100·0

The urine was examined after recovery, in the following cases, without detecting albumen; in No. 1, at the end of five months; in No. 2, at three months; in No. 3, at five months; in No. 7, at the end of ten months; in No. 9, at three months; and in No. 10, at five months. No examination was made in the other cases.

Varieties of anasarca.—Four varieties of anasarca were presented by the preceding cases; the presence of albuminuria, and desquamation of the cuticle, being taken as the grounds of classification.

1. Anasarca with albuminuria and desquamation; as in cases 1, 7, 8, and 10.

2. Anasarca with albuminuria, and without desquamation; as in cases 2 and 4.

3. Anasarca without albuminuria, but with desquamation; as in cases 5 and 9.

[1] Some of the particulars of this case are given in a paper, by the author, on Pericarditis following Scarlet Fever, published in the Medical Gazette, 1845.

[2] These analyses were made by a professional friend, on whose accuracy the author has every reason to depend.

4. Anasarca without albuminuria or desquamation; as in cases 6 and 12.

In the third and fourth varieties, albumen may have been present in the urine at an early period of the disease, in those cases which were only seen at an advanced stage; for there is evidence to show that the kidney is capable of recovering itself in a very short time, and of again secreting non-albuminous urine.

Another division of the cases of dropsical effusion may be made, into *sthenic* and *asthenic*, by taking as the basis, the state of the powers of the system. Considerable power existed in all the cases, excepting 5 and 6; these displayed great exhaustion from the time of their first coming under notice. But there is manifestly an objection to this classification, at least with respect to the above cases, which has been a favourite one with some writers. Those cases which displayed exhaustion were, when first noted, in a late stage of the disease; and again, some of the others, which indicated considerable power at the commencement, were, soon after, signalized by great debility, faintness, and enfeebled action of the heart. This classification, however, may be very useful in a therapeutical point of view.

Another division of the foregoing cases may be justified, viz., into those of *general and persistent effusion*, and into those in which it was of a *limited and transitory* character; the former being dependent on serious obstruction of the kidney, or skin, or both; the latter apparently arising from some slight excited or inflammatory action, or only very evanescent obstruction, of the kidney.

GENERAL REMARKS ON THE DROPSY OF SCARLET FEVER.

1. Its Nature.—The dropsy following scarlet fever is ushered in by certain symptoms indicative of excited action, such as heat of skin, furred tongue, thirst, quick pulse, and reduced secretions. In this respect it resembles the inflammatory dropsy which arises from obstructive disease of the kidney under ordinary circumstances, and differs widely from the passive dropsy originating from venous obstruction. The inflammatory symptoms in the dropsy of scarlet fever, are perhaps owing, in part, to the repletion and distension occurring primarily in the arterial system, which is more active, and more engaged in the functions of nutrition and secretion, than the venous. The fluid of the dropsy of scarlet fever, as well as that of inflammatory dropsy, is the result of exhalation or secretion; while that of chronic dropsy, from venous obstruction, or from debility, is the product of mechanical exudation or of non-absorption. Inflammatory dropsy has sometimes been styled dropsy of the left side of the heart, while chronic dropsy, from venous obstruction at the heart, has been styled dropsy of the right side. More suitable titles would perhaps be arterial dropsy for the former, and venous for the latter.

The effusion in this disease takes place first in the cellular tissue, because the arterial capillaries find there little resistance to the relief of their over-distension. The serous membranes next afford an outlet; but, from their liability to inflammation, the effusion is frequently mixed with coagulable lymph, or is *sero-purulent*.

Pathological causes.—The dropsy following scarlet fever does not

appear to have any essential connexion with the presence or absence of *desquamation of the cuticle*. This is proved by the occurrence of anasarca in cases 2, 4, 6, and 12, in all of which no desquamation whatever took place.

Albuminuria, likewise, is not essential to the production of the dropsy. This is proved by the occurrence of anasarca in cases 9 and 12, in which, the most careful examination failed to detect any albumen in the urine. Another proof may be derived from a reference to the relative dates of the appearance of albuminuria and of anasarca, in those cases in which albumen was discovered in the urine. In case No. 1, albumen was not discovered till several days after the appearance of anasarca; and in case No. 8, only a trace of albumen was detected, on two occasions, fifteen days after the supervention of dropsy, although repeated and careful examinations were made for the detection of that principle, from the time of the decline of the eruption, till the final recovery of the patient.

In all the cases, excepting three, there is undoubted evidence of *partial suppression of the secretion of urine*, before the appearance of anasarca, or some time after its establishment. In two of the three cases, viz., Nos. 2 and 9, the urine was of the usual quantity during the anasarca; in the third, viz, No. 11, no record of the quantity was preserved. Thus it appears, that in nine out of eleven cases, of which a memorandum had been preserved, the urine was secreted in reduced quantity; or, in other words, was retained in the circulation. The retention in the circulation of the urine which should have been excreted by the kidneys, seems to have been an essential cause of the dropsy, in each of the nine cases above referred to; in all of these, there was considerable reduction of the secretion of urine. In the two fatal cases, the quantity of urine passed during the twenty-four hours did not exceed, respectively, four ounces, and "a few ounces." In the two examples of anasarca in which the urinary secretion was of the natural quantity, and in these only, the effusion was confined to the face, and was merely ephemeral.

In order to determine whether the detention of urine in the system, be really an essential antecedent of dropsical effusions, it would be desirable to ascertain the quantity of the secretion prior to the appearance of the effusion, and not merely after its manifestation. To effect this object, considerable trouble is necessary; for it would be indispensable to examine the urine regularly for some weeks after the appearance of the eruption. It is not till the expiration of this time, that anasarca usually manifests itself. Again, as we have no means of foretelling what cases will be followed by anasarca, numerous observations, in all cases, would be unavoidably necessary. The writer is enabled to afford some evidence here,—having carefully noted the condition of the urine for some time, in two cases of scarlatina. After the cessation of the fever the urine was copious; but it then suddenly became reduced in quantity. In one case (No. 7), it assumed a muddy or smoke colour; and anasarca then appeared. In another case (No. 8), the urine was suppressed for two days; anasarca then occurred. There is some reason, therefore, to suppose, that the retention in the system of urine, which should have been voided by the kidneys, is an essential antecedent of scarlatina; at least in those cases in which the effusion becomes considerable.

It may also be rationally conjectured, that, even in cases where there is not considerable suppression of urine, a certain amount of retention of water may take place, and prove one of the necessary antecedents of the effusion. It is not unlikely, that even a small quantity of water not missed in the urine, if checked at the kidneys and retained in the circulation, when the system, and especially the skin, is unaccommodating, and unable to furnish a vicarious discharge, may give rise to partial anasarca.

This retention in the circulation of fluid, which should have been voided by the kidneys, is probably the result of disease of those organs. The kidneys become the seat of disease, at an early part of the progress of scarlet fever; sometimes within the first few days. This is proved by a very great reduction in the amount of secretion, not unfrequently observed at this period. In several cases of anasarca, it was discovered that the quantity of urine had been scanty, or very scanty, during the eruption. Besides, in some cases of scarlatina which were not followed by anasarca, the quantity of urine was reduced to a mere trifle, in the first few days of the disease. In one example, that of a girl two and a half years old, the quantity excreted did not exceed one ounce and a half *per diem*.

The *condition of the secretion* affords another proof of the presence of disease of the kidney, at a very early period of the eruptive disease, and long before anasarca usually appears. The colour has been found to be abnormal; the secretion in some instances being of a reddish tinge; the natural colour being exaggerated in others; while again, in a few cases, it has been observed almost colourless. More rarely it has a green tinge. The odour has been unnatural; in one case, it was sweet, like that of a sickly child's breath. Albumen was discovered on the third day of illness, in a case which terminated fatally on the fifth day. The specific gravity has been abnormal, at an early period: in some cases 1005, in others as high as 1030. It has been observed at first to rise, and then to fall, and to rise again on the appearance of dropsy. Lithate of ammonia has been abundantly deposited in many cases; and, in several specimens, nitric acid has precipitated large quantities of lithic acid. These conditions are doubtless in some measure connected with the state of the blood and digestion; yet they may reasonably be taken as evidences also of renal disease.

The early implication of the kidney in scarlet fever is indicated by the early appearance of certain symptoms; viz., urgent desire to empty the bladder, pain in the region of that organ, and other symptoms, which, it is reasonable to suppose, arise from retention in the circulation, through defective action of the kidneys, of the urinary constituents. Arthritic pains are very often noticed. The *low specific gravity* of the serum of the blood, viz., 1025, in two examples of scarlet fever, may be held to countenance the idea that the kidney is early implicated.

Examination after death has likewise contributed its evidence, to show that the kidney is liable to be early implicated in scarlet fever. The writer unfortunately has not had many opportunities of seeing *post mortem* examinations in cases of scarlet fever, in an early stage of the disease. One patient, however, died on the fifth day of the disease and before the eruption had declined. Death was caused by head affec-

tion, occurring suddenly with convulsions. The body was examined. The left kidney was larger than the right. It was congested to a great extent. When incised, the colour was found deeper than natural, and much blood poured out from every part of the cut surfaces. The papillæ were exaggerated. The right kidney was normal, and this opportunely afforded the means of contrasting it with the diseased organ.

The affection of the kidney in the early stage of the disease appears to be part and parcel of the malady. It is to the kidney what the eruption is to the skin, or what the diffused inflammation and the white patchy exudations are to the fauces. The kidney, in scarlet fever, is destined to suffer a share of this zymotic disease, as well as other parts of the body. The virus of the disease seems to seek the kidney as well as the skin. It is the very nature of the disease for the kidney to suffer. The nature of the affection of the kidney at the early stage of the disease is analogous to that of the skin. It is the peculiar action of the disease. It is probably, in most cases, short of inflammation, but marked as in the case of the skin, with active congestion, increase of the supply of blood, and of general vitality.

When the implication of the kidney is great and the congestion extensive, we have a reduction of the quantity of urine; it also becomes altered, is rarely pale, and of low specific gravity; at other times, high coloured, turbid, and of high specific gravity.

After a time, the congestion remaining, and certain conditions existing favourable to this result, albumen is secreted with the urine, or the red globules of the blood may likewise pass away. The kidney becomes unable to eliminate urea, and that poisonous principle is retained in the blood. The affection of the kidney may decline before anasarca takes place, before the secretion of the kidney is materially reduced, or before albumen or blood appear in the urine.

The kidney, there is reason to believe, may escape implication altogether, in some cases, in the same way that the skin is occasionally not visited by the eruption, or that the fauces remain healthy.

It is well known that, in some epidemics, there exists a greater liability to the affection of the kidney, than in others; and this will explain the more frequent occurrence of dropsy in one visitation than in another.

The excessive formation of epithelium appears to be one of the modes, by which the affection of the kidney causes a suppression of the urine.

It appears, that in many cases, the kidney regains its health after the subsidence of the primary fever; but after a period of repose more or less prolonged, that organ rises into morbid activity again, becomes now the seat of still more active congestion, perhaps of inflammation, and gives rise to a scanty, an albuminous, or a sanguineous secretion, and the excessive formation of epithelium scales, a process analogous to the desquamation at the surface, and thus produces dropsy at a late period. Such appears to be the case, if we may judge from the progress of the symptoms and the examination of the secreted fluid.

This renewed activity, is analogous to the renewed activity which is generally observed in the skin. After the decline of the eruption,

the skin becomes moist, or slightly scurfy, and after having regained its apparently healthy condition, it has frequently, in the experience of the writer, become the seat of great activity, of heat, of dryness, of extraordinary desquamation, repeated again and again, over two, and three, and even four weeks. This excessive action both of the kidney and the skin, is similar to what occurs in some other diseases, and may be regarded as analogous, in some respects, to the glandular swellings after fever, and the inflammatory symptoms after the collapse of cholera.

When the suppressive affection of the kidney is considerable, and does not give way very soon, the circulation will relieve itself, if death do not occur in the meantime, either by throwing some of its superfluous water into the cellular structure, or into the serous cavities, or omit to take up again the normal secretions of those parts,—and thus give rise to dropsy in one or other of its shapes. When the affection is slight, a balance may be maintained for a time, by vicarious exhalation at an open surface, by the skin, the mucous membrane of the bowels, or by the lungs; and dropsy may be thus avoided.

When the skin is blocked up at the same time, in consequence of extensive desquamation, the chances of a balance being maintained without the occurrence of dropsy are materially reduced; and this is one of the reasons that anasarca has been noticed in a large proportion of cases marked by extensive desquamation.

Desquamation, when extensive and repeated, favours the induction of dropsy in two ways. By obstructing the perspiration and exhalation of the skin, a more than usually large quantity of fluid is thrown upon the kidney for elimination, and the kidney has thus its chances of suffering disease materially increased, or of having a slightly obstructive disease raised into a highly obstructive one. Again, no accommodation, however temporary, is given by the skin, to the suffering kidney. The superfluous water of the circulation obtaining no outlet, either at the interior or the exterior of the body, dropsy is more likely to take place. This appears to be the relation of desquamation to anasarca.

The presence of albumen in the urine, as before remarked, does not appear to be an essential antecedent of anasarca. In some cases of dropsy, it was not to be found at all. Albuminuria is only a consequence, among others, of that condition of the kidney which gives rise to the suppression of the urine, the essential cause, or one of the essential causes, of general dropsy. Albuminuria is sometimes found when the dropsy is very slight; and it is not to be recognized in some cases of great severity. It is not always a good criterion of the extent of the disease of the kidney; and it may not show itself until the disease is in its latter stages, or actually upon the wane.

Two cases of anasarca of the face occurred, in which the urine was secreted in the usual quantity. It is necessary, therefore, to look for another cause of the affection, besides the suppression of the urine, or to regard the œdema as different from the anasarca in the other cases. The œdema was coexistent with slight general inflammatory symptoms; in one case there had been slight desquamation of the face, and in the other, extensive and repeated desquamation of the whole surface. In the first case, there could be no retention of an aqueous secretion to any extent; but there had been inflammatory symptoms. In this case,

the cause of the œdema was, probably, a slight inflammatory action of the subcutaneous cellular tissue. In the second case, the cause was, probably, the same, induced or aggravated by the suppressed exhalation by the skin. It is possible that obstructive disease of the kidney might have been present in these cases, but to an extent so slight as not to be appreciable on a cursory examination, yet sufficient to induce partial œdema.

The disease of the kidney occurring after scarlet fever, and connected with anasarca, has been thought by some observers to form the foundation of organic alteration, and to lead to those changes which are associated under the head of Bright's kidney. There is some reason to believe that this opinion is well founded; but fresh observations are required to settle the point in a satisfactory manner. On the other hand, in most examples of anasarca, the kidney appears to regain its healthy condition, if we may judge by the perfect health of the patient for years after, and from the natural condition of the urine. The urine of six of the twelve patients was examined some months after recovery. No albumen was found in any one specimen; and no other pathological character was discovered.

In the experience of the author, the examples of the eruptive disease which are most liable to be followed by anasarca, are marked by smart inflammatory fever, not very violent, and general vivid persistent eruption, or repressed eruption, moderate inflammation of the fauces, persistent desquamation, and scanty, turbid, high-coloured urine, sometimes of a reddish tinge. It is in somewhat analogous and moderate cases of fever, that Peyer's glands are most frequently implicated.

The examples of the disease least liable to be followed by dropsy, are those in which the type of the fever is asthenic, and in which local disease of serious import manifests itself in some part distinct from the kidney. In severe cases of sloughing of the fauces, or of great swelling in the parotid and submaxillary glands, the writer has never found anasarca to follow. Prostrated powers of life, typhoid symptoms, and draining or exhausting diseases in other parts, seem to be unfavourable to the developement of serious implication of the kidney. The very mitigated cases of scarlet fever, in the experience of the writer, have been altogether exempt from dropsy. The only member of the family of the patients Cook, who had scarlet fever in a very mitigated form, so as to be scarcely made out, was the only one who did not suffer from dropsy; and the same observation is applicable to the family of the patients Ford.

The general condition of the system which seems to afford the greatest liability to dropsy, is that of considerable power. A constipated condition of bowels appears to favour the advent of the disease.

Physiological Causes.—Members of the same family display a liability to be similarly affected, in many diseases. It is so in respect to disease of the kidney after scarlet fever. Six of the twelve patients were brothers and sisters in three different families. Calculations have proved to the writer that a child, labouring under scarlet fever, who has a brother or sister affected with anasarca depending on disease of the kidney, has double the chance of being affected with the same evil, that falls to

the lot of another whose brothers and sisters have not suffered in that way from scarlet fever. The female constitution, in the experience of the writer, has not shown any of that greater affinity for the disease, over the male, advanced by some writers.

The comparative activity of the kidney at the early periods of life, serves to increase the risk of disease of that organ in children. The quantity of urea secreted by children is proportionally much higher than that of persons advanced in years. A child of eight years secretes nearly twice as much urea as a man of eighty-four years. This greater amount of labour on the part of the kidney, not only enhances the risk of disease, but makes that disease, when established, greatly more dangerous.

Physical Causes.—The external circumstances which have most favoured the development of anasarca, have been cold and sudden alternations of temperature, particularly from warmth to cold. It is in the evidence of many writers, that this has been a common prelude to the disease; and to accept it as an auxiliary or occasional cause, is consonant with sound pathological principles.

Yet it appears that cold has been too generally and too absolutely put down as the cause of anasarca. It has been already shewn, that there is some evidence to prove, that the kidney, by a law of the disease, is liable to be early affected, and that the affection is analogous to that of the skin. If such be the case, it is not fair to regard cold as an absolute cause. Doubtless it may, and does, favour and aggravate the disease, but it can no more be said to be the cause of the affection of the fauces, because it may, and does, favour and aggravate it; or heat can be said to be the cause of the eruption of the skin, which it is known to promote and increase. Under the greatest care, and under the best management, with a strict regard to the scrupulous exclusion of cold, anasarca has made its appearance, in the experience of the writer; and he is desirous of having it understood, that this disease is, as it were, in some cases, a natural consequence of scarlet fever, and cannot be prevented in every instance, by the best possible known management;—it should be understood, that the appearance of anasarca is not necessarily owing to the mismanagement of the medical attendant or the negligence of parents and nurses, but is rather to be regarded as the result of a natural tendency of the eruptive disease, of course more or less under the influence of good management.

Insufficient dieting and impure air, if they cannot be regarded as among the exciting causes of the dropsy of scarlet fever, have materially added to its danger, and rendered the hapless sufferers from them less able to contend with the disease. By lowering the general vitality, these evils have shortened the opportunity of overcoming the tendency of the disease to death by syncope, and reduced the chance of the kidney regaining its healthy action.

That condition of things which the author has been in the habit of grouping together, under the title of General Sanitary Condition, has decidedly influenced the manifestation of the dropsy of scarlet fever. Where that has been undoubtedly low, there the proportion of cases has been unequivocally greater, than when the General Sanitary Con-

dition has been high. And it is for this reason, in part, that the lower classes of the population suffer from this disease to a greater extent than the upper.

The Treatment of Dropsy.—A careful observation of the cases of anasarca, which have been given above, has led the writer to the conclusion, that such cases will seldom bear general blood-letting and very lowering practice. In this respect, these cases differ very much from the examples of the same disease, which he frequently met with amongst the children of the country people of Haddingtonshire, when he practised in that quarter. There the disease was successfully treated by moderate general blood-letting and other lowering practice. However, general blood-letting is justifiable, where the powers of life are great, and serious local inflammation is threatened. For the cases of partial œdema, a smart purgative, with confinement to bed, will in general suffice.

For those cases of general dropsy, in which the powers of life are considerable, in which the circulation is excited, and the kidneys are obviously congested, the perspiration of the skin is to be early secured, the bowels are to be purged, and blood is to be taken from the loins by leeches or cupping. The value of free evacuations from the alimentary canal, was well illustrated in one severe case of general dropsy. Severe vomiting and purging occurred, and though the urinary secretion did not increase but remained exceedingly scanty, the anasarca visibly declined.

When the disease of the kidney remains obstinate, and the strength will permit, a seton in the loins will form a most useful drain, and successfully relieve the overloaded and overpowered kidney. The permanent fomentation, of flannel wrung out of hot water, the large bran poultice, or what is as useful and more readily procured,—the wash-leather saturated with hot water, or the recent valuable invention, the spongio-piline, applied for some hours round the body at the loins, will prove very useful. These applications, with the exception of the spongio-piline, must be covered with plenty of dry warm flannel to prevent their becoming cool.

The examples of the disease, which are associated with defective general power, whether from original defect of constitution, from privation, or from the exhausting effects of the eruptive disease, demand supporting practice. Whilst the secretions are moderately encouraged, it will, in many cases, be necessary to give wine, vegetable tonics, and iron. The potassio-tartrate and the iodide are the best preparations of iron. The spirits of nitrous æther prove serviceable. Special symptoms will demand special treatment. A nourishing diet is indispensable. In the treatment of some of the cases related in this paper, vegetable tonics were first used, then followed iron, and this plan proved highly serviceable. It will be prudent practice not to be very heroic in the treatment of the disease,—not to tax the powers of life more than appears absolutely necessary for the present emergency,—for cases of anasarca, which have commenced with a display of considerable strength on the part of the patient, have been, in the course of a few short days, marked with great exhaustion, weakness of the heart, almost imperceptible pulse, and syncope.

The employment of diuretics demands discretion. They were not found to be very useful in some of the twelve cases. The secretion has remained almost suppressed, notwithstanding their employment, and again the urine has been remarked to become abundant, pale, and almost colourless, in some instances when they have not been exhibited.

The abatement of the kidney-disease and the return of the natural condition of the vital powers of that organ, are the only true and safe basis on which to rest our hopes of permanent relief, and it does not appear that some of the medicines called diuretics, are pre-eminently calculated to effect these objects. On the contrary, the writer has reason to believe, that some of the more stimulating are calculated, in cases of active congestion, to do much harm, by aggravating the local malady, and he has seen evil to result from their employment. When administered, the milder diuretics should be selected, and their effects carefully noted. When the renal affection has somewhat subsided, the author has found most advantage to proceed from the use of the spirits of nitre, the iodide of potassium, and the alkaline diuretics. In all cases it will be safe and judicious practice to commence with small doses.

Scarifications of the integument, when the cellular tissue remains much infiltrated with serous fluid, will often give relief. They will reduce both the water and the poisonous materials denied an outlet by the kidney. The risk of sloughing will be rendered trifling by the application of a mild ointment to the neighbouring integument, for its defence against the oozing discharge, and against wet or harsh dressings: wash-leather will imbibe the liquid as effectually as linen, and will be less unkind to the sensitive skin. This practice will give relief in the meantime, and afford time for the abatement of the renal disease.

The diet, during the dropsy of scarlet fever, should be carefully regulated. All unnecessary consumption of azotized food should be avoided. The obstruction of the chief emunctory for azotized materials, obviously indicates this precaution.

Prevention of Dropsy.[1]—The occurrence of anasarca will be least liable to occur where means are adopted in an efficient manner to promote the full development of the eruption on the surface; to secure a perspiring condition of the skin during the eruption, and after the decline; to prevent congestion of the kidney; and to secure the free flow of the secretions of the liver and alimentary canal.

The full development of the eruption of the skin will be best secured by confinement to bed during the eruptive period, and for some time after; and this should be insisted on, even in those cases marked by the

[1] The prophylaxis of scarlet fever is a subject worthy of attention. The induction of what may be called the belladonna disease, has been proposed as a preventive of scarlet fever. But is not this a spurious imitation only of Jenner's preventive of small pox? It seems to be founded upon false and superficial philosophy.—If philosophy it can indeed be called. The cow pox is a zymotic disease, like small pox itself. It resembles small pox in its external character, and like small pox, as a general rule, is liable to occur only once in a life time. But these relations do not hold with the belladonna disease and, scarlet fever. Scarlet fever is a zymotic disease; belladonna is not a zymotic disease. Notwithstanding the similarity in the colour and in the locale of the two diseases, they are essentially different in their characters. Scarlet fever rarely occurs more than once in a life time; the belladonna disease may be reproduced at pleasure.

The discovery of some mild allied zymotic disease, which shall prevent the occurrence of

utmost mildness, which is no guarantee that evil will not arise. The maintenance of due warmth,—not of exciting heat,—by a sufficiency of bed clothes, is indispensable; and a moderate determination to the skin is well promoted by the liberal use of warm non-stimulating diluent drinks.

A perspiring condition of the skin, both during and after the eruption, will be materially promoted by the same diluent warm drinks, recommended for the fulfilling of the first indication. The employment of the warm bath will be useful. The writer has been in the habit of ordering it every night during the eruption, and he has reason to believe that it has been serviceable. He must, however, confess that it has not proved, in his experience, the absolute preventive which some writers have reported it to be, in theirs. In cases No. 7, and No. 8, both of general dropsy, the bath was used every night with every possible care to insure its efficient operation. During desquamation, it would perhaps be well to employ the bath night and morning, proportioning the time of immersion to the strength of the patient; and it is not unlikely that its beneficial operation would be increased by the employment of soap, which would assist in the removal of the excessive epithelium. The bath, it may be well to remark, can be useful or safe, only where due subsequent warmth can be secured, and where proper attention can be paid to the drying of the patient.

The congestion of the kidney will meet with some hindrance from the employment of those means, which are recommended for fulfilling the two first indications. A lax condition of the bowels, giving two or three liquid stools in the day, will go far to reduce the chances of inordinate or dangerous congestion of the kidney. The avoidance of stimulating diuretics, or other medicines or cordials which have a tendency to the kidney, will prove a bar likewise to the occurrence of the apprehended evil.

The promotion of the secretions of the liver and alimentary canal, is readily effected by very safe means. Small doses of mercurials, such as calomel, or mercury with chalk, will, when indicated, secure the secretion of the bile. Purgatives or laxatives, according to circumstances, will secure the secretions from the alimentary canal. Their moderate administration, under ordinary circumstances, during the whole period of the eruptive disease, is perfectly safe. The saline purgatives are to be employed with some caution. In being liable to be taken into the circulation they may irritate the kidney; and if obstructed in their passage by that outlet, and retained in the body, they may prove injurious. Castor oil, senna, rhubarb, jalap, and scammony, are perhaps the safest. Where a strong purgative is necessary (which will be seldom), croton oil may be given.

In addition to these indications for the prevention of disease of the kidney, perhaps another may be suggested, viz., the abatement of that persistent and general desquamation of the cuticle (really a disease of morbid activity or growth), which seems actively to favour the develop-

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scarlet fever, as cow pox prevents small pox, is perfectly feasible, and should lead to active investigation. Inoculation for scarlet fever is too dangerous to be adopted, at all events, according to the limited observations on record. Possibly a milder disease might be produced, by the transfer of the virus to some of the lower animals; and re-inoculation successfully practised upon the human subject.

ment of disease of the kidney. The writer is not aware of any means which have been used for the cure of this hypergeny of the cuticle; but it is not unlikely, that the remedies successfully employed in the constitutional squamous diseases would be useful. Slight mercurial alteratives and purgatives would be worthy of trial. Under ordinary circumstances, they would at least be harmless.

It would be a rule fraught with much safety to the kidney and security against anasarca, to insist on every sufferer from scarlet fever, however mild the disease, remaining strictly in bed during the eruption, and for several days after its decline; and to keep the patient within doors for three or four weeks from the time of the commencement of the eruptive disease. By such a rule, many attacks of anasarca would be prevented, and not a few lives saved. It is true this would be effected at the cost of some tedium and irksomeness; but the result would warrant the outlay. Perhaps, in the course of time, observation will enable us to pronounce who are, and who are not, likely to suffer, and to select with accuracy the former only, as requiring prolonged confinement. In the meantime, however, no such selection can be made; and, to prevent danger, all should be subjected to increased vigilance.

80 Park street, Grosvenor square, January 1849.

BIBLIOGRAPHICAL RECORD.

On Cancerous and Cancroid Growths. By John Hughes Bennett, M.D., F.R.S.E., Professor of the Institutes of Medicine, and one of the Professors of Clinical Medicine in the University of Edinburgh. Pp. 200. Edinburgh: 1849.

This work is divided into two parts. The first of these is composed of a record of fifty-six cases of Cancerous and Cancroid Diseases, comprising a history of the symptoms of the disease during life in each; the physical appearance of the morbid parts when removed after death, as observed by the unaided eye; and an account of their microscopical examination, accompanied by short commentaries, to point out the facts of interest contained in each particular case. We may here observe, that the author applies the term "Cancroid," as Lebert has done, to those diseased structures which resemble the cancerous so closely, when examined by the unaided eye, that they are frequently mistaken for them; yet are found to differ essentially from them when examined by the microscope. The important feature in the account of these fifty-six cases of Cancerous and Cancroid Diseases, and which constitutes the chief value of the book, is the minute account of the microscopic examination of the diseased growths, and the numerous excellent representations of their structure, drawn by the author himself from the objects, while under microscopic examination, and copied by him on wood, to secure accuracy in their pictorial illustration. These microscopic examinations seem to have been made with exemplary care, and with the best endeavours to secure correctness; and we are told by the author (p. 4), that he spent three entire days in the microscopic examination, and in making numerous drawings—selections from which have been cut on wood—of the diseased structures of one of the cases he records.

We believe that there can be little doubt that the most experienced surgeons, who trust to the unaided eye alone in determining the nature of morbid growths, not unfrequently class diseased structures together, which the microscope proves to be essentially different, and separate those whose intimate structure is alike; and that this is one of the chief causes of the discrepant accounts given by surgeons of the history of such diseases. Examples of the manner in which such mistakes arise, are given in Cases II and XXXII. In the former, a tumour (removed by operation) was proved, by microscopic examination, to be cancerous; though all those who examined it by the unaided eye considered it to be simply fibrous. And in the latter, the microscope disclosed a tumour to be composed of tubercular matter, though it was first supposed, by all who saw it, to be cancerous. Of the importance of calling in the aid of the microscope in determining the nature of morbid growths, and obtaining more accurate knowledge of them than we as yet possess, or are capable of attaining without it, no one who has even cursorily attended to the subject can, for an instant, doubt.

The profession is therefore much indebted to Dr. Bennett for supplying it with many valuable data for building up a more correct knowledge of the morbid growths classed under the names of Cancerous and Cancroid; for though, as he is well aware, his labours "fall far short of what is required to complete our knowledge of Cancer," and "that much greater research, than has hitherto been employed, is necessary before we can arrive at even glimmerings of the truth respecting it" (p. 137); yet, like a few others, to whose labours we shall have occasion to refer as we proceed, he has advanced in the right direction, and has furnished a goodly share of the materials requisite for

clearing up many points in the history and treatment of such diseases, which it is apparently within our reach to attain. And it is to be hoped, that those who have the opportunity and the means of adding additional materials, will feel it their duty to continue the good work. Though the author, as might have been expected, entertains a very high idea of the value of the microscope in such inquiries, yet he is not disposed, as so frequently happens under similar circumstances, to overrate—at least, to any great extent—its capabilities, and to endeavour to depreciate the other methods employed in the recognition of morbid growths. In the preface he says: "The author thinks it right to state here, what he has endeavoured to inculcate in the body of the work, that the microscope *alone*—that is, independently of all other kind of observation—can seldom determine, in the living subject, the presence or absence of Cancer. At the same time, he feels himself bound emphatically to declare, that he thinks it capable of being as serviceable to the surgeon, in cases of morbid growth, as the stethoscope is to the physician in cases of diseased heart or lungs. Neither instrument is infallible; both require to be studied in an especial manner; both demand long practical experience, and judicious reasoning powers; and both require to be conjoined with all the aids to be derived from other modes of observation," etc. And at page 221, he remarks: "The only physical proof we can arrive at of the existence of Cancer, is by means of the microscope,—not that this instrument is, in itself, capable, even in the most expert hands, of doing anything; but, conjoined with a knowledge of the symptoms, progress of the case, form and appearance of the morbid growth, it offers us an additional and most valuable means of prosecuting our inquiries."

At pages 1 and 2, are to be found directions for examining morbid growths, which it would be well for those who may wish to engage practically in such researches, to acquaint themselves with, as they will furnish the beginner with information on several points of manipulation, and modes of procedure, which he could only make out for himself after much loss of valuable time.

The second part of this work consists of a systematic account of Cancerous and Cancroid Growths, which, the author tells us, is partly founded on his own observations, and partly on those of other writers, but more especially of J. Müller, Gluge, Walshe, Lebert, Vogel, Sebillot, Bonnafont, Engel, Gussenbauer, Beyer, and Virchow, to whose works, nearly all that is known on the true structure and pathology of Cancer may be said to be confined.

This systematic account of Cancerous and Cancroid Growths is arranged under the following heads: 1. Histology; 2. Chemical Composition; 3. General Anatomy; 4. General Pathology; 5. Statistics; 6. Diagnosis; 7. Prognosis; and, 8. Rational Treatment.

Histology.—The different morbid structures included under Cancerous and Cancroid Diseases, are composed, according to Dr. Bennett, of the following elementary forms: 1. Molecules and Granules; 2. Naked Nuclei; 3. Cells of various kinds; 4. Filaments or Fibres; 5. Blood-vessels; 6. Crystals. The distinction between *Molecule* and *Granule* is one only of *size*, and rests upon the quality of the microscope employed. The minute particles are termed molecules when they present no defined external edge; while granules have a defined margin, and are generally of a spheroidal or elliptical form. These molecules and granules are among the most common elements of morbid growths, and are diffused through a blastema, or substance, out of which all the elementary tissues found in morbid growths may be said to be formed, and which is at first poured out in a fluid form, but may afterwards assume various degrees of consistence between fluid and solid. The *Naked Nuclei* seemed to be formed by the fusion and combination of the molecules and granules. The elementary forms already mentioned—viz. molecules, granules, and nuclei—are not only found free in the blastema, but in the interior of certain minute spherical bodies, termed Cells. According to Dr. Walshe (*The*

Nature and Treatment of Cancer, pp. 57-8): "The diameter of the nucleus of Cancer-cells varies between 1-3500 and 1-3000 of an inch, averaging 1-3200 of an inch. The larger are generally to be seen in the cells of encephaloid, the smaller in those of scirrhous growths. The nucleus is relatively larger in young cells. The nucleus contains, in its interior form, one to four clearly defined bodies, the nucleoli,—themselves probably containing within them sub-nucleoli; but such corpuscules are not visible with a power of 400 diameters." The different kinds of Cell, enumerated by Dr. Bennett as occurring in Cancerous and Cancroid Growths, are the following: 1. the Cancer-cell; 2. Epithelial cell; 3. Cartilage cell; 4. Compound granular cell; 5. Fibro-plastic and fusiform cell; 6. Pus cell. These appellations, he admits, are open to objection; but he says he has none better to offer.

Cancer-Cell.—The form of cell which has received this name, presents very various appearances. In form, these cells may be round, oval, caudate, spindle-shaped, oblong, square, heart-shaped, or of various indefinite forms, from pressure on their walls. In size they vary from 1-100th to the 1-10th of a millimetre in diameter. The former size only occurs in an early stage of their development; the latter, when they are old, and contain in their interior other cells. Their average size is from the 1-50th to the 1-30th of a millimetre in diameter. They are destitute of colour, except in melanic Cancer. The contents of these cells are various. In each there is always one nucleus, often two, and sometimes in various numbers, from three to nine. Generally, however, there is only one nucleus, which varies in size, and is round or oval,—more frequently the latter,—and contains one or two granules or nucleoli. In the interior of the cell there is also a colourless fluid, which is, at first, transparent, but afterwards becomes opalescent, from the presence of molecules and granules. Contrary to the opinion of some other observers, Dr. Bennett maintains that Cancer-cells are never developed into fibres. He says that they may become caudate, elongated, and throw out pointed prolongations; but that they do not split into filaments, and that it is probable that those who have described their development into fibres, have mistaken fusiform, or epithelial, cells for these.

Epithelial Cells.—Certain morbid growths, reputed cancerous, were found by Lebert to be composed of cells similar to those of the epidermis or epithelium; and also constituting such epidermic growths as corns and warts. When epithelial cells constitute the principal part of a morbid growth, they become greatly compressed together; the external ones presenting a series of superimposed laminæ, while the deeper are round, oval, spindle-shaped, or more or less altered in form from pressure, and are sometimes united into a firm growth by compression, or by filaments of areolar tissue, p. 150. We do not think that the term epithelial cell is well chosen; for there can be no doubt that some, at least, if not all, of the epithelial cancroid growths described by Dr. Bennett, are composed of cells, which, howsoever closely they may resemble the ordinary epithelial cells of the mucous membranes histologically, show, by the course which they run, that they must differ from them physiologically, or in their vital actions. A growth composed of epithelial cells would not, as far as we know, reproduce itself in the lymphatic glands in the course of the lymphatic vessels leading from it; as may occur in chimney-sweep's cancer, and certain growths on the tongue, ranged by Dr. Bennett under the epithelial growths. *Epitheloid* would, we suggest, be a better appellation for these cells. At all events, it is clear that they are not *epithelial*.

Cartilage Cell.—The cells in morbid cartilaginous growths are large, and, as stated by Müller, more resemble those in the tissues of the embryo, than in those of the adult. These cells, so named from their resemblance to the cells in normal cartilage, are found in enchondromatous growths.

Fibro-plastic and Fusiform Cell.—Under the term "fibro-plastic," Lebert describes a peculiar round or oval corpuscle, with a small nucleus, which has a tendency to elongate at both extremities, and to become transformed

into fibres. These bodies are met with in all stages of their development in Cancerous and Cancroid Growths, but also very often in normal tissues, which have no tendency to undergo the cancerous degeneration. Dr. Bennett has observed fibro-plastic corpuscles, some of which had split up into fibres, in ordinary inflammatory effusions. The caudate cells, one form of the fibro-plastic element, frequently abound in cancerous tumours, especially in medullary cancer, but we have seen that they may also exist in non-carcinomatous growths.

Compound Granular Cell.—This form of cell also presents itself in ordinary inflammatory effusions, and has been described by pathologists under the designations of "inflammation globule," "granular cell," and "exudation corpuscle." It is also common in every kind of Cancerous and Cancroid Growths.

Pus Cell.—The pus cells found in Cancerous and Cancroid Growths do not differ from those in the puriform effusions of ordinary inflammations.

Filaments and Fibres.—Filaments and fibres generally form the basis of both Cancerous and Cancroid Growths; but these do not differ from the fibrous tissue existing in normal textures, either in their nature or development, at least as far as our present knowledge goes. Sometimes these filaments are very delicate; at other times they resemble those in the elastic tissues, and may be so closely set together, as to be separated with difficulty by the needle. They sometimes run side by side in wavy bands, or are interwoven together; at other times they are arranged so as to form loculi or large interstices. The consistence of Cancerous and Cancroid Growths, must, as can readily be imagined, depend in a great measure upon the relative proportion of the fibrous and cellular elements.

Blood-vessels are more or less abundant in Cancerous and Cancroid Growths. Not long ago, much importance was generally attached to the arrangement of the blood-vessels in morbid growths; but since so much light has been thrown upon the development of the tissues, both normal and morbid, by the researches of Schwann and his followers, it has been shown that the blood-vessels merely serve the purpose of carrying the blood, from which the tissues, both normal and morbid, derive the materials capable of being appropriated by them for their nutriment. Müller says (*Observations on the Minute Structure of Morbid Growths*, p. 14), "that fine injections are by no means well suited to display the minute texture of morbid growths. Indeed, with the exception of aneurism by anastomosis, these growths present no remarkable arrangement of vessels, and, consequently, no peculiarity which injections could render more distinct; while they have the disadvantage of concealing important forms of structure, such as may be satisfactorily studied by means of the microscope in fresh specimens, or even in such as have been kept for some time in alcohol."

The Chemistry of Cancerous and Cancroid Growths throws no light upon their peculiar vital properties. They are composed of the same chemical proximate principles as other exudations from the blood, which become organized; so that it is impossible to distinguish them chemically from other morbid products, or even from the healthy tissues. The chemical constituents of Cancerous and Cancroid Growths may be divided into four groups: 1. Albuminous principles. 2. Fatty principles. 3. Mineral principles. 4. Pigmentary principles. Müller (*Opus cit.*, p. 10) has divided cancerous growths, yielding much of the albuminous principles, into two groups. 1st. Those which, by long boiling, are reduced almost entirely to gelatine, such as the cellulo-fibrous tumour, the tumor fibrosus, seu desmoides, enchondroma, and the colloid tumour. All these tumours, it may be remarked, would be classed by Dr. Bennett among the cancroid. 2nd. Those which do not yield gelatine after long boiling, but which are chiefly composed of albumen.

In all probability, all morbid growths are formed in this way:—a fluid, which we term *blastema*, is poured out from the blood into the tissue where

the morbid growth is about to be formed. In this blastema, granules and molecules present themselves, and these become fused or collected together into nuclei. Out of, or upon, these nuclei, cells are formed. These cells may become changed into filaments or fibres, or they may, during the whole of their existence, retain the cellular form. New cells may be generated in the interior of those already formed, by the agency of the nuclei and the nucleoli, so that two or more new cells may be perceived in the interior of the older cells; and as these new cells increase, they fill up the interior of the old cells, and cause the absorption or the rupture of their walls. While new cells are thus generated in the interior of the old cells, others may be forming in the surrounding blastema. It would also appear, that fibres may also be formed by the molecules and granules of the blastema arranging themselves in lines. We thus perceive that there is a strict resemblance between the development of healthy and morbid tissues. Each cell has an independent life; and may live and form new cells, altogether independent of those with which it is associated, as long as it can derive nutritious matters from the blood. From this we may understand the sometimes very rapid increase of those morbid growths composed of cells, and the almost certainty of their reproduction, if, in their extirpation, any portion, however minute, of them be left.

General Anatomy of Cancerous and Cancroid Growths.—These growths are formed by a combination of the elementary tissues mentioned above. As these elementary tissues are intermixed in various proportions, forming growths which differ considerably in their physical properties, when examined by the unaided eye, various classifications of these have been proposed. Dr. Bennett agrees with Dr. Walshe in arranging all cancerous growths under three forms; namely, schirrhous, or hard; encephaloma, or soft; and colloid, or jelly-like, Cancer. The other forms enumerated by morbid anatomists may be classed under these three. As cancerous growths essentially consist of cells, fibres, and a viscid fluid, the relative proportion of these three determines their peculiar form. "If the fibrous element be in excess, it constitutes schirrhus, or hard Cancer; if the cells be numerous, encephaloma, or soft Cancer; and if the fluid abound, and be collected into loculi or little cysts, it is colloid Cancer." Various modifications of the encephaloma, or soft Cancer, have received well known designations. When the blood-vessels give way, and blood is effused into parts of an encephaloma, the growth is then termed *fungus hæmatodes*. When fatty degenerations of portions of an encephaloma occur, and assume a reticulated form, it has received the name of *Cancer reticulare*. When a dark pigment is infiltrated among the cancerous elements, or is collected in the interior of the cells, the tumour then constitutes the *malignant melanosis* or *melanic Cancer* of authors. We may here remark that Dr. Walshe states, in the article (*Products, adventitious*), in the *Cyclopedia of Anatomy and Physiology*, pp. 137-8, among other reasons in proof of the statement, that a constant and unfailing microscopical characteristic of Cancer has hitherto been vainly sought for, that "a tumour may present to the naked eye the characters of encephaloid, be the seat of interstitial hæmorrhage, affect the communicating lymphatic glands, run in all respects the course of Cancer,—and, nevertheless, contain no cells but such as are undistinguishable, in the present state of knowledge, from common exudation cells." Dr. Walshe farther adds, "In ultimate analysis, the *single* character least likely to deceive is this:—if a tumour be cancerous, it will yield, on pressure, an opaque, whitish (milky or creamy-looking), albuminous fluid; if it be not cancerous, it will not yield a fluid of those qualities." The distinction between Cancerous and Cancroid Growths has hitherto not been sufficiently attended to; and Dr. Bennett especially dwells upon this point in various parts of his work, and points out that our knowledge of these affections must be vague and fluctuating, as long as they are mixed up together. He classes the Cancroid Growths as follows. 1. Fibro-nucleated cancroid growths. 2. Epithelial cancroid

growths. 3. Fibrous cancroid growths. The third or last division contains the following sub-divisions. *a*. Sarcomatous tumours. *b*. Desmoid fibrous tumours. *c*. Chondroid fibrous tumours. *d*. Neuromatous fibrous tumours. 4. Cartilaginous cancroid growths. 5. Fatty cancroid growths. 6. Cancroid tubercular growths. These different forms of cancroid growths are shortly described, and illustrative drawings of their elementary constituent tissues are given. As it is impossible to convey anything like a clear or definite account of these various tumours, within the limits allotted to our Bibliographical Record, we must refer our readers to the work itself.

General Pathology.—This chapter discusses our knowledge regarding the origin, progress, and decline of these growths. We have observed nothing in the account of the origin of these tumours which need be here noticed. Under the head "Degeneration" (p. 210), it is stated that "the progress of a cancerous growth may receive a check, from the cells, which are the entire agents of growth, being rendered abortive, and the result may be—1, a fibrous cicatrix; 2, a fatty mass; or 3, a calcareous concretion." In proof of the possibility of the first method of cure, or, as it is here termed, degeneration, he refers to several cases of cancerous ulcers collected by Dr. Walshe, where the cancerous cells became gradually less in number, whilst the fibrous elements increased, and terminated in the production of a cicatrix. He also refers to a memoir, published in 1845, by Professor Bochdalek of Prague, *On the Healing Process of Cancer in the Liver*, in favour of the opinion, that cancerous tumours in the liver may become softened and disappear, and their place be occupied by a cicatrix. Proofs are also given of the occasional deposition of fatty matters and earthy salts in cancerous tumours, in such quantities as to completely occupy the whole morbid mass, and thus arrest its progress. At p. 215 it is stated, "I have thus endeavoured to show, that a cancerous growth does not necessarily proceed to a fatal termination, but that, like all other forms of exudation, after passing through its natural stage of growth, it may occasionally be transformed into a substance which will remain latent in the economy. This substance may be fibrous, fatty, or mineral; and may sometimes be composed of the whole, and at other times, of any two of these combined in various proportions. It must be confessed, however, that hitherto these transformations have been seen to occur in comparatively few instances; and it would consequently be in the highest degree imprudent to expect such a result in any individual case."

Statistics.—Dr. Bennett affirms, that no trustworthy statistics of Cancer, sufficient for any useful purpose, as yet exist; and when we remember the vagueness of the notions, regarding cancerous diseases, of those who furnish a large share of the materials employed in the construction of the usual statistical tables of Cancer, we are disposed to concur in this opinion. He states, that of the 526 cases recorded by Lebert, Sédillot, Gluge, himself, and some others, in which the morbid structures were carefully examined by the microscope, about two-thirds are cancroid, including all kinds of tumours not strictly cancerous. Time will show how far the new statistics are trustworthy.

In his remarks on the Diagnosis of Cancerous and Cancroid Diseases, the author points out that the microscopic examination of the discharges from ulcerated growths, placed in positions where these may be obtained unmixed, or of small nodules cut from the surface of the ulcerated surface, may be highly useful in enabling us to detect their nature. It is well known that the greater number of practical medical men have arrived at the conclusion, that cancerous diseases almost invariably prove fatal. Our author, after pointing out that the difficulties of recognizing cancerous diseases in many cases, by the means usually employed, must render these conclusions less trustworthy, expresses himself more confidently on the curability of Cancer than most practitioners will regard as well founded. "It appears to me", he says, at p. 233, "that all analogy opposes the doctrine of the necessarily fatal nature of Cancer, or of any other morbid alteration of the economy. There

was a time when phthisis pulmonalis was also thought to be necessarily fatal, and when recoveries from it led practitioners to doubt their diagnosis rather than the truth of a received dogma. Morbid anatomy has exploded that error, as it will doubtless do that regarding Cancer." We know too little of the history of those growths which have been termed cancroid, to enable us to offer any very satisfactory remarks upon their prognosis.

In the chapter on the RATIONAL TREATMENT OF CANCEROUS AND CANCROID GROWTHS, the author considers—1, the means of Retardation and Resolution; 2, the means of Extirpation; and 3, means of Prevention. The growth of cells in animals and vegetables is favoured by an elevated temperature, a proper supply of moisture, room for expansion, and certain localities; and, on the other hand, is retarded by excessive cold, dryness, want of room, and unfavourable positions. Now as cancerous and cancroid tumours chiefly or entirely advance by the development and growth of cells, by placing the affected part under the circumstances unfavourable to cell development and growth, their progress may be retarded or arrested. The direct application of cold, therefore, when circumstances will permit of it, may be employed with this view. The cutting off the usual supply of fluids for a time, by the ligature of the arteries leading to the morbid growth, has also in some cases been apparently attended with good results. Pressure, steadily and effectively applied, has, according to some practitioners, been used with excellent results. The apparatus invented by Dr. Neil Arnott, figured and described by Dr. Walshe, or that more recently invented by Dr. JAMES ARNOTT of Brighton, with which external cold and dryness may be combined, seem the best fitted for carrying this mode of treatment into effect. The means of extirpation are: 1. The excision of the part; 2. Chemical agents which destroy texture. It is well known, that many surgeons, discouraged by the frequency of the recurrence of cancerous diseases, feel indisposed to remove them by operation; the more especially as they believe that, in many cases, it hastens the fatal termination. Other surgeons, again, take a more favourable view of operative interference; and, believing that they have excised growths undoubtedly cancerous, which have never returned, and that in other cases, though ultimately unsuccessful, they have relieved the patients from much present suffering, and have thereby prolonged life,—advocate having recourse to excision. One of the arguments usually urged by those who are averse to excision, in most cases, has been, that it is barbarous to subject the patient to an operation, often very painful, when we have little hope of its being useful,—is now, in a great measure, removed by the late discovery of the anæsthetic effects of ether and chloroform, especially the latter. No doubt the imperfect methods, hitherto almost generally practised, of distinguishing between Cancerous and Cancroid Growths accounts, in a great measure, for these discrepant conclusions of practical men. Dr. Bennett, after alluding to the successful results that have, in some cases, followed the excision of morbid growths,—proved, by the microscope, to be cancerous,—expresses himself in the following terms: "In like manner, by operating at an early period in all cases of suspected tumour, and keeping careful records, both of the minute structure (of the parts) removed, and of the ultimate results, much advantage would be gained to surgery. Lastly, by boldly excising all Cancerous growths within his reach, when, after careful investigation, the surgeon has satisfied himself that no internal organ is affected, and repeating the operation so long as the return of it is merely local, I feel persuaded that not only in many cases would life be prolonged, and much suffering saved, but that some might be permanently cured." (p. 246.) "If this applies to cancerous, it does so, with tenfold force, to cancroid growths, which every thing that we know warrants us in asserting are much less fatal and malignant." (p. 245.)

In discussing the "means of prevention," after pointing out how little confidence is to be placed in the internal remedies which have been recommended for correcting that unknown predisposition, in particular individuals, to can-

cerous exudation, he throws out some general views for regulating the constitutional treatment of Cancer, founded upon the difference between tubercular and cancerous deposits, which he, however, admits are purely hypothetical. As Vogel states (*Pathological Anatomy of the Human Body*, p. 290), carcinomatous structures are distinguished from tubercular, by their higher organization. Dr. Bennett (pp. 250-1) argues that, in proportion as the power of cell-growth increases in cancerous growths, they abound more and more in fat; this excessive cell-development must be materially modified by diminishing the amount of fatty elements, which originally furnish elementary granules and nuclei; and that a tendency to the formation of fat would seem, *à priori*, to be opposed to the cancerous tendency. "If a tendency to fat be an antidote to tubercle, as I believe it is, spareness may probably be considered opposed to Cancer. In the one case, we should do all we can to bring the nutrition up to, and above, the average; in the other, down to, and below, it." This plan of treatment does not preclude the endeavours to invigorate the general health by exercise, and attention to the secretions and excretions. We might not have noticed such prophylactic suggestions, from their being so extremely hypothetical, were it not that our deplorable ignorance regarding the constitutional treatment, both empirical and rational, of cancerous affections, induces us to listen patiently to speculations regarding it, which, in other circumstances, we would not be inclined to tolerate.

The profession is much indebted to Dr. Bennett for this valuable contribution to our knowledge of the microscopic structure of Cancerous and Cancroid Growths. It bears ample evidence of his great zeal, industry, and success in pathological researches.

Demonstrations of Anatomy; being a Guide to the Knowledge of the Human Body by Dissection. By George Viner Ellis, Junior Professor of Anatomy in University College, London. Second edition, rewritten. Part I. pp. 464. London: 1849.

In the preface to the first edition of his Demonstrations, Mr. Ellis remarks that "Anatomy may be studied in two different methods,—the one demonstrative, and the other descriptive. The former treats of the parts only as they are exposed in dissection, and of their relative position; the latter gives minute details of objects unseen, describing the different structures without reference to the order in which they appear, and has been very generally employed in the numerous works of instruction in Practical Anatomy. But every one acquainted with the difficulties to be overcome by the young dissector, will readily admit that this method is insufficient as a guide to his progress." Of the correctness of these observations, there can be no question. Most of the works intended as dissecting-room guides have been too much on the plan of systematic treatises on Anatomy, in which the description of one set of organs, *e.g.* arteries, or nerves, is commenced and completed, without regard to the order in which the parts are displayed in dissection, or without due reference to their relation to neighbouring structures. The student is thus compelled either to study the Anatomy of one organ, or set of organs of a similar kind, to the neglect of other parts presented to him in dissection, either till their relations had been destroyed, or until he could procure a fresh subject,—a matter often of great difficulty,—or to undertake the irksome task of searching through various parts of his guide for the fragmentary descriptions of the parts exposed to his view.

"To supply this deficiency," says Mr. Ellis, "the present work, planned and completed from the subject, and confirmed by experience, is humbly submitted to the student, in the hope that his labours will be diminished, and the advantages to be gained in the pursuit of practical knowledge increased. In the execution of this plan, the great divisions of the body which are generally established, viz. head and neck, thorax, back, extremities, and

abdomen, have been placed in different sections; and the dissection of each has been conducted by the employment of successive stages, determined either by certain apparently natural limits, or by those most convenient in practice; by means of full directions for the performance of the different steps; by describing, at one time, only so much of a part as is visible; and by noting each as it appears." (Preface to first edition.) The advantages of this plan are obvious. It facilitates the endeavours of the student to obtain a clear idea of the parts he sees before him, and enables him to economize the means at his disposal; and further, it renders him familiar with *regional Anatomy*,—a method of studying the structure of the human body which is likely to prove of the greatest value to him in the practice of both medicine and surgery. An objection may be made, that the dissector is likely to lose sight of the connection between parts of the same organ, artery, or nerve, by examining it in different stages. We have had extensive opportunities of observing the use of Mr. Ellis's book, and do not remember to have seen that difficulty experienced. Besides, the student of Anatomy is supposed to study some systematic treatise as well as his dissecting-room guide; and Mr. Ellis's work is not intended as a substitute for Dr. Quain's *Anatomy*, by Professors Quain and Sharpey, Cruveilhier's *Anatomy*, translated by Dr. Madden, or other books of that class. He must often refer to a good systematic treatise to enable him to connect, in his mind's eye, the *disjuncta membra* which he has inspected, portion by portion, in the dissecting-room.

With all its excellencies, arising from the *regional plan* of description, and from its being the production of an accomplished practical anatomist and popular instructor, the first edition was not without its blemishes. These arose for the most part, from an overstraining of the subject beyond the capacity of the young student, rather than from any meagreness of information. Clearness was sometimes sacrificed to minuteness of description. The getting up of the work did not readily enable the student to refer to the descriptions of particular organs; there was a want of division into paragraphs and sentences of moderate length, and an absence of some means of distinguishing the principal objects presented, and to which the student should more particularly confine himself in his first dissection, from those to which he might more advantageously direct his attention at a subsequent period. In the second edition of his Demonstrations, Mr. Ellis has endeavoured, and we think successfully, to remedy these defects, and to render the book thoroughly suitable to the wants of the student. On first seeing the new edition, we were struck with the improvements in clearness which it manifested. The typography of the second edition is more distinct; the description of each organ, or part of an organ, as dissected, has a separate paragraph allotted to it; the names of muscles, large arteries, and other parts of prominent importance, are printed in small capitals at the commencement of the paragraphs, while the minor parts are distinguished by italics; and the student in his first dissection can easily determine what parts may be omitted for another occasion, as the descriptions of the smaller branches of arteries and nerves, and other parts requiring minuteness of dissection, are printed in a different type. The author has supplied a few omissions which existed in the first edition: but the chief improvement consists in his having shortened and rendered clearer his descriptions, by the breaking up of long and complicated sentences. To show the amount and character of the changes effected, we subjoin, from the two editions, the descriptions of the superior laryngeal nerve, and of the left subclavian artery at its origin.

"The *superior laryngeal nerve*, much larger in size (than the pharyngeal nerve) arises from the inner side of the (pneumogastric) nerve opposite the interval between the first and second cervical vertebræ, it descends beneath both carotid arteries, and in front of the longus colli

"The *superior laryngeal nerve* is much larger than the preceding branch (the pharyngeal), and arises from the middle of the ganglion of the trunk of the vagus. From this spot, the nerve inclines obliquely inwards, be-

muscle, to the pharynx and larynx, and forms an arch across the side of the neck lower down than the glosso-pharyngeal nerve; it now crosses the upper border of the middle constrictor of the pharynx, runs forward on the thyro-hyoid membrane beneath the thyro-hyoid muscle, with the laryngeal branch of the superior thyroid artery; the nerve then perforates the membrane, enters the larynx, and its distribution is followed in the dissection of the larynx; it supplies, for the most part, the mucous membrane. The nerve occasionally enters the larynx by an aperture in the side of the thyroid cartilage."—(1*st Edition*, p. 216.)

neath the internal carotid artery, and reaches the larynx opposite the interval between the hyoid bone and the thyroid cartilage. The nerve then perforates the thyro-hyoid membrane, and is distributed to the mucous membrane of the larynx.—See LARYNX."—(2*nd Edition*, p. 105.)

The thoracic portion of the *left subclavian* artery "extends from the arch (of the aorta), to the margin of the first rib, ascends almost vertically from the chest, being closely enveloped by the left lamina of the pleura, which enters into the mediastinum, and separates it from the lung; but it is too deep in the chest to have any relation to the sternum and the muscles which arise from this bone, and it is posterior to the left brachio-cephalic vein. The artery lies on the trachea and recurrent nerve, then on the œsophagus which projects to the left of the trachea, on the thoracic duct which crosses beneath it, and is placed, higher in the neck, between the carotid and subclavian arteries, and above this it is situated over the body of the first dorsal vertebra, but at some distance from it, and rests on the last cervical ganglion of the sympathetic; to the inner side is the trachea, and the œsophagus and the thoracic duct, above where they are crossed by the vessels, together with the pneumogastric and cardiac nerves, and the left carotid artery, which are parallel but more anterior than it; and to its outer side is the pleura and the lung."—(1*st Edition*, p. 344.)

"The left subclavian trunk is directed almost vertically from the arch of the aorta to the inner margin of the first rib. In the thorax the vessel lies deeply, resting first on the œsophagus, and then on the side of the vertebral column, in front of the longus colli muscle; and it is covered by the left pleural bag in all its extent. On its inner side are the trachea and œsophagus, with the thoracic duct. Somewhat anterior to the level of the artery, though running in the same direction, is the vagus nerve, with some of the cardiac nerves."—(2*nd Edition*, p. 327.)

The marginal notes, in the second edition, are likely to be of great service to the student, by supplying a running abstract of the text and giving facility of reference. The author is quite on a level with the progress of anatomical discovery, and has endeavoured to make the student acquainted with whatever is known, so far as it could be appropriately introduced. We are at a loss, however, to assign a reason for the omission of the descriptions of the organs of vision and hearing. A chapter might have been allotted to each, after the one on the anatomy of the brain.

Part First of Mr. Ellis's *Demonstrations of Anatomy*, contains the dissection of the head and neck, upper limb, thorax, back, and part of the abdomen. The Second Part is promised for October. We have great pleasure in recommending the first portion of the work, and in saying that if the second be not inferior to it, the whole will constitute the best manual for the dissecting-room with which we are acquainted.

LONDON AND PROVINCIAL MEDICAL DIRECTORY, for 1849. Pp. 532. London; 1849.

The volume for 1849 of this useful Annual is reduced in size, by the suppression of the Medical Diary and some other unimportant matter. The price also has been diminished from 8*s.* 6*d.* to 5*s.* To these alterations we make no objection; but we think some interesting features (such as the Obituary), have been spoiled, with very little saving of room; whereas there are retained trumpery titles, as appendages to certain names, which, when thus gravely paraded in the Directory, tend to throw all medical designations into ridicule. Mr. R. H. Whiteman, L.A.S. (p. 117, *London Directory*), is (from a misprint) styled "lecturer on the Nutritive Functions of the Human Body"! and Mr. James Cockle, in practice prior to 1815, (and of pill celebrity), figures at p. 52, as "matriculated at the University of Edinburgh, 1801"; which matriculation costs 10*s.* 6*d.*, and is open to all the world. Recognized titles only should be given in a work professing to be a Directory to the Medical profession. It was quite right to curtail or to omit the names of many of the books and papers of authors: but, unfortunately, no uniform principle has been adopted, the most valuable works of many being deleted from this year's volume, and the least important retained: and sometimes the most recent, and at other times the earliest contributions only are mentioned.

In the preface, the editors say,—"We flatter ourselves that considerable improvement upon previous editions will be found in the present volume, as to matter, arrangement, and new contents."—"The whole work has undergone a complete revision," etc. And again they say,—"We flatter ourselves that in no work of a similar character will fewer errors be found," etc. Self praise is always best avoided; but here, praise from any quarter is quite out of place. The errors are numerous, and many of them are obviously the result of sheer carelessness in revising the press, and want of collation of one part of the book with another. The publication for this year seems to have been issued without any editorial revision.

Had the "Street List, including the Suburbs," been accurate, or even had it been correctly made up from the alphabetical portion of the Directory, it would have formed a useful addition: but we find, that, even tested by other parts of the book itself, it is not to be trusted. Under "University Street, Gower Street, No. 32", is given the name, "Littleton, N. H., M.B."—but we look in vain for this gentleman in the Metropolitan List of practitioners. More frequently, however, the names in the Alphabetical List have not been inserted in the Street List. For example,—under "Putney," we find only the names of three medical gentlemen, viz., "Cormack, J. R., M.D., Shillito, Charles, M.D., and Shillito, Charles, jun." But on turning to the Metropolitan List, we discover the names of three other gentlemen in practice in that suburb, viz., "Whiteman, R. Harland, L.A.S. (p. 117); Ridge, Benjamin, M.D. (p. 98); and Macilwain, George, M.R.C.S." (p. 85). Strangely enough, in the Provincial List, we discover yet one more Putney doctor, viz., "Warre, Daniel, M.D." (p. 437). Why Dr. Ridge should be entered in the Metropolitan List and Dr. Warre in the Provincial, is to us a mystery,—inasmuch as we are told that both reside in the "High-street." As a climax to all these blunders, we may mention, that there is not, and never was, such a person as Dr. Warre in Putney; but that there is Dr. Wane, whose name is not to be found in any of the lists. Under "Finsbury Pavement, No. 20," we find Dr. Peacock; but on turning to the Metropolitan List, we observe his address is there given as "20, Finsbury Circus." Were our space of less value, we would go on multiplying our proofs of the charge which we bring against the editors, of neglecting the collation of the various lists in the work; but we have said enough to justify our accusation. We have now to state that the errors in designation are numerous, and chiefly the result of inattention. The editor ought to have known that Dr. Bence Jones is a Fellow of the

College of Physicians; and that Mr. Edward Tuson is not now Surgeon to the Middlesex Hospital. Besides errors such as we have given examples of, we find, especially in the Street list, a style of designation entirely absurd and greatly calculated to perplex the public. Without any explanation, and regulated only by caprice, some doctors are styled in the Street list, M.D., others Phys., and a select few "Physican." Dr. Paris, President of the College of Physicians, is plain "M.D." All the practitioners in Bolton Street, have "Phys" appended to their names, and Dr. Ramadge, Ely Place, is among the few styled "Physician." A number of gentlemen entitled to M.D. have it not appended to their names.

The projectors and editors of the *Medical Directory* have done good service to the profession by establishing their annual. It has, to our certain knowledge, greatly helped to expose the dishonest pretensions of ignorant pretenders, and to present the claims and position of regular practitioners in a proper way to the public. It is, therefore, from a desire to improve, and not with the intention of injuring, this work, that we have refrained from bestowing upon it the indiscriminate praise so freely lavished by most of our contemporaries. We think that were more editorial care bestowed on the work, its circulation would be much extended, and any attempt at the establishment of a rival publication rendered futile. Were errors of carelessness removed, few members of the medical profession would grudge to give five shillings annually for the *London and Provincial Medical Directory*.

CHEMISTRY, AS EXEMPLIFYING THE BENEFICENCE OF GOD. By GEORGE FOWNES, F.R.S. Second edition. Pp. 160. London: 1849.

It appears that, "in the year 1838, Mrs. Hannah Acton, widow of the late Samuel Acton, Esq., of Euston-square, from motives of respect and regard for the memory of her deceased husband, and in order to carry into effect his desire and intention," provided means for the foundation of a septennial prize (under the management of the trustees of the Royal Institution of Great Britain), to be awarded to "the author of the best essay illustrative of the wisdom and beneficence of the Almighty, in such department of science as the committee and managers should, in their discretion, have selected." The work now before us is a second edition of the successful essay for the first period of seven years.

The subject is ably and felicitously discussed in the following order: 1, Chemical History of the Earth and the Atmosphere; 2, Peculiarities which characterize organic substances generally; 3, Composition and sustenance of plants; 4, Relations existing between plants and animals. The need of fatty and oleaginous food in the frozen regions of the north, is popularly and simply set forth in the following passage, which we extract as a specimen of the style of the author:—

"Take the condition of the Esquimaux in his hut of ice-blocks, or drift-wood; his only food the seal and the walrus, which he spears with his bone-pointed weapon, from a little frail coracle of skins. The air is cold enough to freeze quicksilver; he wraps himself in his dress of furs, and forth he goes with perfect impunity, and the cold of the shores of the frozen sea affects him less, than that of a chilly January day does the Englishman by his warm fire-side. Yet the Esquimaux has no fire-side; he cooks his food by the heat of a lamp fed with oil, the produce of the chase; his country produces no fuel, and he cannot think of devoting the few fragments of wood, brought by the ocean-currents from more favoured climes, which he finds upon the sea-beach, to this purpose,—they are far too valuable to be so employed. How then, it may be asked, is he capable of supporting this intensity of cold? The peculiarity of his food furnishes the reply.

"We are accustomed to look with horror and disgust at the food of these poor people, as we, in our ignorance and presumption, dare to call them; to commiserate the taste of those who, as our northern navigators relate, prefer

a piece of tallow-candle, or draught of train-oil, to the fare of an English man-of-war. But a little more consideration might, perhaps, shew us that the blubber and fat of the arctic cetacea and fish—the only food the inhabitants of these countries can obtain—really constitute the only sort of food which could enable them to bear up against the extremities of cold to which they are subject. There is no other substance but fat,—and that in very large quantity,—which would answer the purpose required. It is a substance exceedingly rich in hydrogen ; and, in the body, eminently combustible. Weight for weight, it will generate a far larger amount of heat, when burned in the blood, than any thing else which can be taken as food. It will be wiser, then, instead of condemning, as filthy and abhorrent, the tastes and propensities of the Esquimaux, to consider them as a special adaptation, by an unspeakably benevolent Providence, of the very wishes and inclinations of the individual to the circumstances of his life." (Pp. 118-120.)

A Course of Lectures on Dental Physiology and Surgery ; delivered in the Middlesex Hospital School of Medicine. By John Tomes, Surgeon-Dentist to the Middlesex Hospital. 8vo. pp. 397. Plates and wood-cuts. London, 1848.

These Lectures, sixteen in number, are a collected edition of a course delivered by the author at the Middlesex Hospital, in the year 1845, and published, at various intervals, in the *Medical Gazette*, for that and the two following years. In his preface, Mr. Tomes says: "It has been thought advisable that these Lectures, scattered at irregular intervals in the columns of the *Gazette*, should be collected; and, after undergoing such revision and amendment as my leisure and opportunities afford, be published in the present form. The illustrations are double the number of those published in the *Medical Gazette*, and are re-engraved."

The first six Lectures are entirely devoted to the Structure and Physiology of the Human Teeth ; and we cordially recommend their perusal to all desirous of investigating this subject, as a concise and lucid account of what is known respecting it. For more extensive details relating to the anatomy, both human and comparative, of the teeth, Professor Owen's *Odontography* can be referred to. The recent investigations of Purkinge, Retzius, Owen, Nasmyth, Tomes, Goodsir, and others, have brought our knowledge of this branch of structural anatomy to a degree of perfection, unsurpassed, if not unequalled, by that of any other department of that science. Among these honourable names, Mr. Tomes appears distinguished; as he seems to have been the first in this country to investigate with success the structure of the teeth. The discoveries of Purkinge and Retzius, though not known in this country, had been made when Mr. Tomes commenced his researches: his observations confirmed the views of the foreign anatomists.

In his description of the structure of the human teeth, the author first treats of their general form and relation to each other; and then gives a concise account of their microscopic structure, describing in succession the dentine, the enamel, and the cementum. The characters of the dentinal tubuli, their peculiarities in form and arrangement in different parts of the tooth,—the intertubular tissue, which he considers granular,—the vascular canals in dentine, common in lower animals, but only occasionally found in man,—the *secondary dentine*, deposited in the pulp-cavities of the teeth of old persons,—the effects of madder on dentine,—and the chemical analysis of this substance;—together with the structure of the enamel and cementum,—as far as they relate to the human teeth, occupy a considerable portion of the second and third lectures.

The concise, yet perfect, manner in which these subjects are treated of by the author, scarcely admits of condensation, therefore we extract some interesting remarks on the "Relations of the Dental Tissues to each other, and

to Bone", which occur towards the end of the third Lecture. After stating that all tissues are, strictly speaking, extra-vascular, but that we must regard a tissue as highly organized, or not, in proportion to the relative frequency of capillaries and vessels in the interstices, Mr. Tomes says:—

"Taking the relative frequency of vessels in a tissue as an index of the degree of its organization, teeth will be placed near the bottom of the scale, but different grades will be assigned to their three component tissues." "The cement, or tooth-bone, when collected in any amount, is possessed of vessels, as well as cells and radiating tubes, in connexion with the vascular surfaces. To this element of the tooth we must, in accordance with the above plan, give the highest place. The dentine, possessing sometimes, though not constantly, vessels, has in all cases its tubes or capillary pores opening directly upon a vascular surface; this, then, must be considered as the second, while the enamel, itself without vessels, is only connected with a vascular surface by the intervening dentinal tubes, and holds the third, or lowest degree of organization of the three dental tissues.

"If the relative density of tissues be in proportion to the low degree of vitality, still the dental substances will hold the above arrangement. Again, if the relative sensibility of tissues be regarded as an index of their degree of vitality, still the same places must be accorded to the cement, dentine, and enamel."—pp. 62, 63.

In accordance with the law of gradual transition from one form of organized structure to another, and from observations on the dentinal and cemental tissues in the kangaroo, where they are mixed, and a few specimens of human teeth presenting the same appearance, it appears that "the dentine is but a modification of the cementum; that the dentinal tubes are but elongated cemental cells; and that this elongation is necessary to enable the tooth to perform its allotted part in the animal economy. In tracing the relations between the dentine and enamel, we find the change in passing from one structure to another equally gradual. For illustrations, recourse must be had to the teeth of fish, in which the two structures very nearly resemble each other. In man, the tubes send branches into the enamel; but the two structures, being each highly developed, present points of marked dissimilarity."—p. 64.

With respect to the *relation of the dental tissues to bone*, Mr. Tomes remarks, that "in bone, as in the cementum, and in dentine, and indirectly in the enamel, we find a set of capillary tubes, commencing upon a surface" (that of the Haversian or vascular canals, or the pulp-cavities in teeth), "bathed by vascular currents, and passing into the structure, there to establish a perfectly continuous network of tubes, so that a fluid entering at one point may find its way through the whole mass. That this arrangement is subservient to the nutrition of the texture is sufficiently apparent, when we consider its relations to the vascular system, coupled with the fact, that these tubuli must be filled with fluid, even by atmospheric pressure, and that the only source of fluid is the blood." "From these considerations it is seen that osseous and dental tissues are, in the form and arrangement of their cells and tubes, very closely allied. But the relations of the ultimate tissues are yet closer; for dentine and cementum, and probably enamel, are built up, like bone, of more or less spherical granules, the difference in the tissues being in the arrangement of the granules, and in the relative quantity of earthy matter with which they are impregnated."[1]—pp. 65, 66.

Lecture IV treats lucidly of the Development of Animal Tissues from Nucleated cells—Development of the Teeth from Papillæ composed of cells—the Papillæ derived from Mucous Membrane—three stages of Dentition:

[1] We here may remark, that Dr. Sharpey describes the lamina surrounding the Haversian canals in bone as having a finely reticular structure; but we are not aware whether any such appearance has been observed in the teeth.

Follicular, Saccular, and Eruptive. For the substance of this lecture the author is in a great part indebted to the memoir of Mr. John Goodsir, to whom, principally, anatomists owe their knowledge of this branch of the subject.

Lecture V contains an account of the Development of the Dentinal Pulp and its conversion into Dentine—of the Enamel Pulp and its conversion into Enamel—and the Cemental Pulp and Cementum. The *Dentinal Pulp*, from its earliest appearance, is "mainly composed of a series of nucleated cells, united and supported by plasma, and is supplied with vessels, and during the greater part of its existence, with nerves." In addition to these elements, the author has observed, in the earliest stage, a fine *areolar tissue*, consisting of a "mesh-work of delicate fibres and bands of homogeneous matter, in the thicker part of the walls of which are scattered here and there nucleated cells; while the meshes are occupied by a thick, clear, homogeneous fluid or plasma; and in this there are a number of nucleated cells." A partial persistence of this condition appears to give rise to the appearance of cavities, sometimes found in the dentine. In the *second* or *cellular* stage, the areolar tissue has disappeared, and the dentinal pulp consists of thickly but irregularly scattered nucleated cells; which, in the *third* or *linear* stage, acquire a linear arrangement, nearly vertical to the surface. The development of the dentine then proceeds by the longitudinal division and elongation of the cells, and the communication of their central nuclei or cavities, so as to form a continuous tube. The subdivision of the primary cells into four secondary cells, described by Mr. Owen, has not been observed by Mr. Tomes; nor has he been able to satisfy himself that amorphous subgranular salts are deposited in the interior of the tubes. The processes of linear arrangement and calcification commence at the apex of the coronal surface of the pulp, and extend down its sides; and the form of the cells may be distinguished after their confluence and impregnation with lime. The moniliform appearance of the tubuli in the temporary, and sometimes in the permanent teeth, which led Mr. Nasmyth to consider them as baccated fibres, is believed to be due to the individual pulp-cells preserving the convexity of their centres after union. At pages 94 and 95, we find a comparison of the development of the osseous and dental structures. After giving an account of the formation of bone, the author says: "In comparing the development of dentine with that of bone, we find that at first sight the pulp-cavity of the former bears a very striking resemblance to an Haversian canal, and that the dentine resembles an Haversian system. On considering the subject more carefully, we find, also, that the pulp-cavity of the tooth is analogous to the medullary cavity of bone, and that the dental tubuli are analogous to the canals formed by the confluence of the cartilage cells, prior to the existence of vessels in newly-formed osseous tissue. Thus it would seem that, where a tubular tissue is required, the tubes are formed by a linear confluence of cells"; the tubes so formed either retaining their original character, as in dentine, or becoming canals for vessels, as in bone.

The *Enamel Pulp* is first found in a *reticular* stage, consisting of very fine structureless fibres, the interstices of which are occupied by fluid, in which are peculiar nucleated cells, from 1-2500 to 1-1000 of an inch in diameter. Next to this, which is on the dentinal surface, we find, according to Mr. Tomes, a *stellated areolar tissue*, consisting of "short transparent fibres that radiate from central nuclei, take a straight course, and join other nuclei that are similarly circumstanced." The reticular gradually gives place to the stellated tissue, probably from the radiation and union of the large cells of the former; and the dentinal surface of the latter is formed into a basement membrane, with nuclei, from which are developed columns. The reticular tissue is provided with blood-vessels; and it seems that through these and the fluid of the tissue, and afterwards through the stellated tissue, the nutriment destined to reach the columnar tissue must pass. As the functions of the reticular and stellated tissues become performed, they gradually merge

into the columnar form, and lose their vascularity. The author makes an interesting comparison of the enamel pulp with mucous membrane. He describes a structure resembling the basement membrane, on the surface of the dentinal pulp, to which the columns of the enamel pulp are fixed: and he considers the cells forming the enamel to be analogous to the epithelium of mucous membrane, differing, however, in becoming hard and persistent. The transverse striæ, observed by Mr. Lintott, are believed to be due to "the alternate contraction and dilatation of the fibres, the contractions corresponding with the junction, and the dilatations with the centres, of the cells."

The *Cemental Pulp* differs from those before described, in gradually increasing on the external surface as calcification proceeds from within, outwards. In its development, it has a close analogy to the cartilage from which the flat bones are formed. Exostosis, or hypertrophy of the cementum, sometimes occurs; and in such cases, new cemental pulp is formed.

Lecture VI treats of the Eruption of the Temporary and Permanent Teeth, and contains some remarks on the Teeth as an index to Age, on Third Sets of Teeth, Supernumerary, and Discoloured Teeth, the Hereditary Character of Teeth, and the Form of Teeth and Palate, as necessary to Voice and Speech. On the latter subject, the author makes the following remark: "Wherever you have a fine, clear, sonorous voice, you will find well formed and well arranged teeth; each tooth will occupy its proper place. But what is perhaps still more important, the hard palate will be well formed; that is, it will present a section of a large arch, perfectly free from contraction, either from side to side, or from before backwards. There will not be a deep vaulted form, neither will there be a sudden elevation immediately behind the front teeth, so common in those who speak with indistinctness: on the contrary, the palate will rise gradually." (p. 123.)

The remaining ten Lectures are devoted to the Diseases of the Teeth, and their Treatment.

Lecture VII is occupied with a description of the Diseases which are incidental to the Temporary Teeth; and we find here noticed, Interrupted Dentition, Inflammation, and Induration of the Gums; Caries and Necrosis of the Temporary Teeth; Diseases of the Gums during the presence of the Temporary Teeth (Inflammation, and *Cancrum Oris*); and Diseases of the Alveolar Periosteum of the Temporary Teeth. In the treatment of *cancrum oris*, (by which the author understands a disease commencing by phagedenic ulceration of the gums), he recommends the use of gray powder, as a mild aperient; the use of tonics, and liberal diet; and the destruction of the whole surface of the ulcerated part, by nitrate of silver. Chlorate of potash, as recommended by Dr. Hunt, appears to be an useful remedy.

To this Lecture are appended some interesting statistics of the relative durability of the teeth, with respect to situation, age, and the several conditions which render their removal necessary.

Lectures VIII and IX treat of Irregularities in the appearance and arrangement of the Permanent Teeth, and of mechanical injuries: and contain some useful instruction on the means of remedying these conditions.

In Lecture X *Caries of the Teeth* is ably treated of. The author defines it to be *death and subsequent progressive decomposition of the whole or part of a tooth*. He believes "that the dentine, from abnormal action, loses its vitality, and, with the loss of vitality, the power of resisting chemical action; and that, consequently, the dead part is, under favourable circumstances, decomposed by the fluids of the mouth." Where the dead part is separated from the living, this is discovered by Mr. Tomes to be attended with a filling up of the tubes of the healthy dentine, so as to cut off the ingress of fluids. This consolidation has its analogue in what takes place in the antlers of the stag, previous to their being shed, where the Haversian canals become very small, and the canculli are almost obliterated by the development of laminæ.

The decomposition of the dead dentine, he believes to be effected by the acid secretions of the mouth; but if the saliva contain an excess of phosphates, or the dead dentine be highly polished, decomposition will be retarded. He concludes, that "*dead dental tissue, when retained in the mouth, will be decomposed or not, in accordance with the circumstances under which it is placed; and that the decomposition is effected by agents applied externally; and, moreover, that the phenomena observable without the aid of the microscope, are wholly attributable to the decomposition of a necrosed portion of dental tissue.*" (p. 214.) The *predisposing causes* of caries are chiefly found in the development of the dental tissues, and especially the enamel. This is sometimes defective in *quantity*,—being irregular on the surface, giving a honey-comb appearance; and in such cases, it will generally be found that the patients suffered from ill health at the time when its development was going on. In some cases, the fissures, which are superficial on the healthy surface of a molar, are continued nearly to the dentine, with only a small layer of enamel, having a bulb-like mass of granular matter superimposed at the bottom. Defects in the *quality* of the enamel are of several kinds: 1. Where the enamel-fibre remains permanently granular, calcification having advanced before the blending of the parts was completed; 2, the substitution of calcified cells for fibres; 3, the presence of cavities in the substance of the enamel, sometimes large, and interfering with the course of the fibres,—sometimes small and elongated, and lying between them; 4, where the fibres of the enamel are not perfectly united; 5, cells are occasionally found in the enamel of faulty teeth. In the dentine, the presence of areolar cavities acts as a predisposing cause of caries. In addition to these, there may be constitutional causes; pain and decay coming on sometimes without any obvious reason, sometimes after fever,—especially scarlet fever; occasionally after salivation. Scrofulous children are liable to lose their teeth early; also dyspeptic persons, or those living in a low, damp situation. Many substances, as mineral acids, or the gastric acids in eructation, are liable to produce caries. The author has not observed that relation between lateral pressure and caries, which is insisted on by some writers. The consequences of caries may be destruction of the crown without pain; or there may be pain from the beginning, and inflammation of the pulp, dental periostitis, and alveolar abscess; sometimes even periostitis and necrosis of the jaw; occasionally tumours of the gums, or fungous growths of the pulp. In the treatment of superficial caries, the diseased portion should be removed by a file or sculper, and the surface of the dentine kept well polished. Chloride of zinc, or other escharotic, may be used to destroy sensibility where there is much pain. But if the disease be found deeply seated, recourse must be had to plugging. On this subject the author observes: "It is a very good practical rule, if, in removing the softened dentine, or in pressing a probe into the cavity, pain is felt; but only so long as the instrument remains in contact with the tooth,—to proceed to plug the cavity, for then the pain will be in the dentine only, and will not be followed by mischief; but if the pain continue after withdrawing the instrument, to postpone plugging, and resort to some means to restore the pulp to a healthy condition, or to produce its destruction,—for the continuance of the pain is a tolerably sure sign that the pulp is more or less involved in disease, and has been pressed on by the instrument; and that, if the tooth be immediately plugged, inflammation will supervene." (p. 230.)

Lecture XI contains an account of dental necrosis, exostosis, abscess in the substance of the dentine, loss of enamel and dentine from the anterior surface of the teeth, absorption of the fangs of the permanent teeth, cracks in the enamel, pain in sound teeth.

Lectures XII and XIII are devoted to diseases of the dental pulp, and to diseases of the dental periosteum.

Lecture XIV embraces the diseases of the alveoli, gums, and antrum. Our limits will not permit us to do more than state, that the subjects we

have just enumerated are treated of in a manner which shows the author to be thoroughly conversant with them.

Lecture XV is devoted to *Operative Dentistry*; and contains, at the end, some remarks on *Anæsthesia*. The author is by no means in favour of the indiscriminate use of chloroform or ether, in cases of extraction of the teeth. After stating some of the ill results which have arisen from the use of anæsthetic agents, he observes: "We surely use a great power to overcome a very trifling difficulty, when we give chloroform preparatory to extracting an ordinary tooth. The remedy, in my mind, seems strangely out of proportion to the evil to be avoided. Then again, if the mind is to be disturbed for a week or fortnight (and these cases are not so uncommon), is it well to take that chance merely to avoid a transient pain? Distressing nausea for a day, would be, to me, a far greater evil than the pain occasioned by the extraction of an ordinary tooth. I say an ordinary tooth, because, sometimes, there is inflammation of the gums, or a peculiar shape or position of a tooth, or other complication, that makes the operation unusually painful. If such complications exist, or if several teeth have to be removed at the same time, the pain being greater, we are, perhaps, warranted in using a powerful antidote." (p. 356.) He prefers the minimum dose of chloroform, both because it is not necessary to induce complete insensibility, and on account of the unpleasant symptoms which not unfrequently follow the use of a full dose.

Lecture XVI is occupied with instructions for the construction, adjustment, and use, of *artificial teeth*.

We have endeavoured to give a general outline of this excellent work, along with a pretty full abstract of some portions of it; but the entire volume must be perused by those who desire to be well informed on the subjects of Dental Physiology and Surgery.

AN ESSAY ON SOME OF THE MOST IMPORTANT DISEASES OF WOMEN, WITH A DESCRIPTION OF A NOVEL INVENTION FOR THEIR TREATMENT AND RELIEF. By W. JONES, M.D., etc., Physician to the Free Hospital for Women and Children, etc. Illustrated with Cases and Wood-cuts. 12mo. pp. 40. London: 1848.

From the title-page, above transcribed, one would hardly fancy that the "Essay" of Dr. Jones would not occupy more than twelve pages of the type in which this notice is printed; yet such is the case. But is the matter all original? If so, many would excuse its brevity; and pardon the magniloquence of the title-page. The profession surely did not require such information as is contained in the following passage:

"The most common period of the commencement of menstruation in this country is from the twelfth to the fourteenth year. It is generally ushered in, or at least accompanied by the following train of symptoms. The individual experiences pains and inconveniences unknown to her before, she becomes more timid and reserved in manner, shuns the society of her hitherto male (!) companions, loses the frolic and buoyancy of childhood, to assume the grace and dignity of woman; the haunches expand, the breasts become fuller, the whole frame is moulded into a chiselled roundness, and an effusion takes place which characterises the arrival of puberty. This effusion ordinarily occurs every twenty-eight days, which being the duration of the lunar month, it is hence called THE MENSES: it is also denominated THE CATAMENIA; in common parlance its existence is expressed by the terms, being unwell—being regular—having a change—or other terms of which ingenious delicacy prompts the employment."—pp. 18, 19.

The "novel invention" is the "Syphon douche", an instrument "founded on the property which water has, to find its own level, and to escape with a force proportionate to the height of its column. It consists of 9 feet of gutta percha

tubing, three-sixteenths of an inch in the diameter of its bore, divided into two parts—one seven, the other two feet in length ; to one end of the longer portion is attached a small leaden weight, and to the other, the plunge portion of an union-joint ; to one end of the shorter portion is attached the corresponding socket portion of the union-joint, and to the other, a perforated bulbous tube of box-wood, or other material, for introduction into the natural passage." The author considers his invention something more than—what we really believe it to be—a very efficient contrivance for washing out the vagina ; for he says, " the bulb may be made of caoutchouc, gutta percha, bone, ivory, or other material, but I prefer box-wood, more especially in the treatment of disease, because, reasoning from the manifest development of free electricity by the passage of steam at a high pressure through box-wood jets, as seen in the hydro-electric machine, I am induced to think it possible, that some such development takes place in the employment of this instrument, and am otherwise at a loss to explain its efficient action in dissipating congestive and other tumours in the uterus."—p. 26. Perhaps our readers may be able, from the title-page and the above extracts, to form a correct estimate of Dr. Jones's *Essay on some of the most Important Diseases of Women*. Our own opinion is, that Dr. Jones—who seems to be a sound practitioner—has inadvertently done himself an injustice, by allowing his pamphlet to appear in a form, and under a title, which may induce many to regard it rather as an obtrusive advertisement of its author, than as a contribution to science.

TREATISE ON THE DISEASES OF THE HEART AND GREAT VESSELS, AND ON THE AFFECTIONS WHICH MAY BE MISTAKEN FOR THEM ; comprising the Author's view of the Physiology of the Heart's Action and Sounds. By J. HOPE, M.D., F.R.S. Fourth edition. 12mo. pp. 611. London: 1849.

This Treatise of DR. HOPE ought to find a place on the shelves of every medical practitioner, and of every student of clinical medicine. It is one of those classical works which can never grow old or get out of date. The present edition possesses the advantages of cheapness and additional matter (left in manuscript by the author); but, for economy sake, the plates are necessarily omitted, with the exception of the diagrams illustrative of the diagnosis of valvular disease. The value of this edition is greatly enhanced by the copious and excellent index of MR. JAMES FREEMAN.

A PRACTICAL TREATISE ON THE DOMESTIC MANAGEMENT AND MOST IMPORTANT DISEASES OF ADVANCED LIFE ; with an Appendix, containing a Series of Cases illustrative of a New and Successful Mode of Treating Lumbago and other Forms of Chronic Rheumatism, Sciatica, and other Neuralgic Affections, and Certain Forms of Paralysis. By GEORGE E. DAY, M.D., Fellow of the Royal College of Physicians, and Physician to the Western General Dispensary. 8vo., pp. 337. London : 1849.

This work, though intended for the public, may be useful to the profession. A considerable amount of information has been collected ; and the Bibliography of the different branches of the subject has been carefully compiled. The method of treating Lumbago, etc., so hopefully announced on the title-page, is the "*cautérization avec le marteau*" of MAYOR,—a practice which seems to have been previously recommended in 1826, by the late SIR ANTHONY CARLISLE, in his letter to SIR GILBERT BLANE, " On Blisters, Rubefacients, and Escharotics." DR. DAY refers to this, and to the writings of M. TROUSSEAU and DR. CORRIGAN on the same subject.

CRITICAL DIGEST OF THE BRITISH AND FOREIGN MEDICAL JOURNALS.

PRACTICE OF MEDICINE AND PATHOLOGY.

DR. RILLIET ON INTESTINAL HÆMORRHAGE IN NEWLY-BORN INFANTS.

Cases of Intestinal Hæmorrhage in Newly-Born Infants are not numerous; and many of those recorded are so deficient in detail, as to be of little value. English treatises on diseases of children certainly do not give adequate attention to the subject; and though French and German pathologists have taken more notice of it, it is still so imperfectly known as to justify our inserting, without much abridgment, a translation, rather than an abstract, of a valuable memoir, entitled *Sur les Hémorrhagies Intestinales chez les Nouveau-Nés (Melæna des Enfants)*, by Dr. Rilliet, Physician to the Hospital of Geneva. The following is the substance of his essay:

Introductory Remarks.—The circumstances in which the newly-born infant is placed at birth, from the delicacy, and peculiar anatomical structure of its organs, together with the impediments which may be opposed to the free play of the new functions which, at that time, the organs are required to perform, predispose it to certain forms of hæmorrhage,—which may be regarded as special to it, so far as causes, though not as symptoms and results, are concerned. The most common forms are cerebral and rachidien hæmorrhage; the former inducing apoplexy, and the latter, tetanus. Another, and a rarer description, is hæmorrhage into the stomach and intestines.

Dr. Hesse, in his memoir, *Von Blutbrechen und der Melæna der Neugebornen*, etc. (1825), gives the literary history of the disease, of which, in the following essay, I have freely availed myself. In 1750, Storch mentioned the melæna of infants. After this date, we find scattered observations and cases by Brebis, Ellinger, Riedlin, Hoffmann, Frew, Trnka, Lafaurie, and Carus. The earliest monograph on the subject is that published, in 1825, by Dr. Hesse, and above cited. Dr. Rahn-Escher (of Zurich) published, ten years after the appearance of the work of Dr. Hesse, some interesting facts, bearing principally upon the consequences of the disease and its etiology. Since the appearance of these two works (the former of which was republished, almost verbatim, in the treatises of Meissner in 1838, and of Schnitzer in 1843), nothing has appeared on the subject, in Germany, except some isolated cases by Kiwisch, in 1841, Lumpe (*Oest. Med. Wochenschrift*, Nos. 4, 5, and 51, of year 1841), Hoffmann (*Badische Med. Annalen*, 1842), and Helmbrecht (*ibid.* vol. ix, 1843). Kiwisch, who calls the disease "*the abdominal apoplexy of new-born children*," alleges that it can be distinguished from hæmatemesis and from melæna. This distinction is not justified by his cases, which present a very great similarity to all those recognized as cases of melæna. Billard (*Traité des Maladies des Enfans Nouveau-nés, et à la Mamelle*, 3me édition, p. 384), refers to intestinal congestions and hæmorrhages. He draws no distinction between primary and secondary hæmorrhages; but his cases belong exclusively to the latter class. Dr. Gendrin (*Traité Phil. de Médecine Pratique*, t. i, p. 189) makes some remarks on the anatomical character of the disease. M. Barrier, in his *Traité des Maladies de l'Enfance* (1845), reproduces the researches of Billard, Rahn-Escher, and Gendrin. Two cases have been published in England by Drs. Dorington and Gairdner; but in the English treatises on the diseases of children, there is no mention made of the melæna of infants.

I have had an opportunity of observing, at Geneva, a case, unique in the

annals of medical science, of hæmorrhage from the stomach and intestines of male twins. These cases, and the works already cited, afford the materials for the following observations.

1. Causes.—The etiology of infantile melæna is still involved in obscurity. The subject may be treated of under the following heads :—

1. *Age and Sex.*—It is essentially a disease of the early days of life. Generally, those affected are not more than from one to four days old; but in a case mentioned by Gairdner, it did not come on till the eleventh day; and in another, recorded by Ellinger, it did not occur till about the end of the fifteenth or twentieth week. From the cases which I have consulted not being all complete, the figures in the following tables exhibit variations :—

Age.	No. of individuals.	Age.	No. of individuals.
12 to 30 hours	4	4 days	2
1 day	5	6 days	2
56 hours	1	11 days	1
2 days	2	15 weeks	1
3 days	1	20 weeks	1
Total ...	20		

Billard, in fifteen cases of passive hæmorrhage, observed :—

Age.	No. of individuals.
1 to 6 days	8
6 to 8 days	4
10 to 18 days	3

It appears that the greater proportion of cases occurred among male infants.

2. *Hereditary tendency.*—From an analysis of cases made by Dr. Rahn-Escher, he has been led to attach much importance to this cause. He found that the mothers had been subject to irritation of the glands, derangement of the abdominal circulation, and disorder of the function of digestion, both during the existence and non-existence of pregnancy. It must be recollected, however, that these maternal conditions are very common, and that nevertheless melæna is extremely rare in newly-born infants. Hereditary influence can be more readily admitted, where the parents have been subject to hæmorrhage (as in cases quoted by Hesse), or where several children of the same family have been simultaneously affected, as I have seen, or successively, as Dr. Rahn-Escher has observed.

3. *The circumstances attendant on the delivery, the state of the infant at birth, and its treatment immediately afterwards—Do they afford a more satisfactory explanation of the hæmorrhage ?*—It has been alleged that long delay of the infant in a narrow pelvis, protracted labour, and difficult parturition, produce melæna. By examining the imperfect cases which we possess, I have ascertained that the number of difficult somewhat exceeds that of natural labours; but in this there is nothing remarkable, as most of the mothers were primiparous. Besides, the difference is so inconsiderable, as hardly to deserve to be taken account of.[1] Kiwisch is the only author who, in reporting his cases, notices premature ligature of the chord as an active cause. In two of his four cases, the chord was prematurely tied, and in a third, symptoms of cyanosis obliged the midwife to cut the ligature. The greater number of Billard's fifteen cases were remarkable for plethora of the body, and a congested state of the integuments. The observations of authors, as well as our own, do not sanction plethora being regarded as a cause of

[1] We are inclined to think that the author probably under-estimates the importance of protracted and difficult labour, as causes of melæna in the infant; and this suspicion is strengthened by two facts, incidentally admitted by him, viz., that the majority of the infants were males, and the majority of the mothers primiparæ. Male births are more difficult than female, and first are more tedious than subsequent labours.—Ed. *London Journ. of Med.*

melæna. Out of sixteen infants, eight were delicate and feeble; seven healthy; and only one asphyxiated.

4. *Rupture of a vessel*, Brebis considers among the causes; but his hypothesis is entirely contradicted by pathological anatomy. Béhler, Billard, Rahn-Escher, Gendrin, Kiwisch, Hoffmann, Helmbrecht, and Dorington, state, that in opening the intestinal canal, they have specially noted the absence of any grave lesion of the vessels. In some cases, nothing has been observed, beyond the presence of extravasated blood in the stomach and large intestines, the mucous membrane being not more injected than it naturally is in newly-born infants (Gendrin, Kiwisch). In other cases, this membrane presented no lesions whatever; but the large abdominal vessels, the liver, spleen, heart, lungs, and cerebro-spinal system, were gorged with blood (Billard). The dilatation of the mesenteric and mesocolic veins—in some places to the size of a crow-quill—has been mentioned by Béhler. Helmbrecht has observed dilatation of the capillaries, with thinning of the mucous membrane. Dorington and Rahn-Escher have observed ramollissement, inequality, and redness of the mucous membrane of the large intestine, without extravasation of blood.

The true Predisposing Causes ought to be sought for—

First, in the injection of the intestinal tube, a state which is normal in the newly-born infant, as has been shown by Billard. It is easy to understand how an exaggeration of this condition, arising from atony of the vessels, or an impediment to the abdominal circulation, produced by an arrest of blood in the vena portæ, or by the increased volume of the liver and spleen, should, in a high degree, predispose to intestinal hæmorrhage.

Second, in the difficulty with which respiration becomes established. The blood, not being able to flow to the lungs, expands them but imperfectly, engorges all the other organs, and especially the intestines, which, being already in a state of congestion, are unable to support this new tax, and allow the blood to be emitted from the vessels into the cavity of the bowel.

II. Description of the Disease, and Cases.—I cannot give a better account of the disease, than by detailing the two cases which occurred in my own practice. They are more complete than most of those recorded by authors.

Case I.—On the 30th of January, 1846, I was sent for (at 1 p.m.) to see a newly-born male infant, said to be in very great danger. The following particulars were communicated to me by the nurse and medical attendant, M. Maunoir:—The infant (a twin), had been born at four A.M. Labour had not been very difficult, but sufficiently so for M. Maunoir to employ the forceps. The placenta had separated. The liquor amnii had been in small quantity. The umbilical chord presented nothing remarkable: it had been tied at the usual time, and in the ordinary manner. The infant was of the full time, not very large, but well proportioned, not plethoric, very lively, crying forcibly. All the functions appeared natural; the meconium had been expelled some hours after birth, after half a tea-spoonful of castor oil. The child then had some rest, after which he sucked with avidity: nothing, in fact, could lead one to suppose that anything untoward had happened, till the nurse, in changing his linen, observed that some remains of the meconium had been expelled, mingled with a certain quantity of blood. Two hours later, he passed a second stool, abounding with pure blood, liquid, and mixed with clots; and at one o'clock, when I was sent for, he had a third bloody motion. When I examined the little patient, he was deadly pale. His pulse was imperceptible; his legs and arms were cold; his eyes were habitually closed, as was likewise his mouth. He neither had the wish nor the ability to swallow, but retained the power of moving and crying. The abdomen was soft, and not swollen, and pressure on it did not seem to occa-

sion pain. He had no vomiting. The mouth presented no lesion, when examined by forcible depression of the inferior maxilla; and there were no nervous symptoms. I caused compresses, soaked in cold vinegar, to be applied to the abdomen, directing, at the same time, the extremities to be wrapped up in hot flannels. I prescribed two clysters, containing twelve grains (nearly ten grains of English Apothecaries' weight) of the extract of rhatany.

They were almost instantly returned, accompanied by a very considerable quantity of blood. At four in the afternoon, the infant continued in the same state, when M. Maunoir and I prescribed compresses, soaked in a strong decoction of rhatany (two ounces to the pound), and clysters, with twelve grains of the extract. Like the former, they were almost immediately rejected, and followed by a copious discharge of fluid and clotted blood. He had the sixth bloody stool at six in the evening. We were now satisfied with simply applying the compresses. The pulse rose to 120; the infant had slight trembling of the hands, and oscillation of the globes of the eyes; but nothing which could be properly called convulsions. The abdomen was not tympanitic. From 10, p.m., to eight o'clock the next morning, he was induced to take from eight to ten tea-spoonfuls of cold milk, which remained on the stomach; he was then put to the breast. He seized the nipple easily; the pulse was regular, and of fair strength. At mid-day, he passed two scanty stools of a green colour, and destitute of blood. At one o'clock, the countenance was good, not very pale; and the pulse was 104, and of fair strength. He was sucking easily and greedily; the trembling of the arms and the oscillation of the eyes had disappeared. At eight A M., on the 8th of February, he passed two yellowish stools: during the night, upon several occasions, he sucked for two or three minutes. The pulse was small; but his cries were energetic, and his movements proclaimed the existence of life. His countenance had become contracted, and it had that yellow tint characteristic of those who have frequent hæmorrhages. The abdomen did not present any symptoms, excepting tympanites in the extent of three finger-breadths in the left hypochondrium. Upon this day, the cure was considered as certain; the child improved rapidly; but the pallid visage remained for a considerable time. When he had attained the age of six weeks, he was vaccinated; and the skin, though scarcely wounded by the lancet, afforded a considerable quantity of blood. At present, he is quite robust, and in a natural condition.

No appreciable cause, external or internal, hereditary or acquired, anterior, concomitant, or posterior to parturition, can be assigned as the cause of the invasion of the disease.

Case 2.—The first child was in an alarming condition at six o'clock in the evening, when I was sent for to see the second, who was vomiting blood, and who, immediately after, passed several large stools of liquid blood, mixed with clots. I ordered for him clysters of rhatany; but, as in the case of his brother, they returned, being followed by copious bloody stools. I rested satisfied with applying, to the belly, compresses, soaked in a cold decoction of rhatany, and wrapping up the inferior extremities in flannels saturated with a hot aromatic infusion. The same general symptoms presented themselves as in the first case: paleness, coldness of surface, smallness of pulse, trembling of the limbs and trunk, and oscillation of the eyes, and an absence of abdominal distension. The bloody stools recurred during the night, but in diminished quantity. At one o'clock, he was in a worse condition than his brother; the pulse was lower, being only 112; there was great drowsiness. In the morning, he swallowed some spoonfuls of milk, but did not suck well. He was observed to be very lean; in this respect resembling his brother. On the 1st of February, at 9, a.m., I made the following report.—From yesterday, to one o'clock this morning, he has only had two small bloody evacuations,—the last being between five and six o'clock. As yet, he has had no

normal stool; he has taken the breast, on several occasions, with sufficient eagerness; the pulse is 120; the animal heat is everywhere sufficient; and nothing particular can be observed in the other functions. During the day, he began to have yellow stools, which continued on the following day, on which he took the breast with avidity. On the 2nd of February, the pulse was 104, and the visage had improved. A cure was accomplished as promptly, and as completely, as in the case of his brother.

The two cases just detailed, are, I believe, unique. Two twins were simultaneously effected with a disease so rare as melæna. It cannot have been the double pregnancy which predisposed these infants to this occurrence. It is evidently to their similarity of organization that we must attribute their simultaneous seizure. What other cause can be assigned? The health of the parents was faultless, with this exception,—that, during the three months preceding marriage, the mother had amenorrhœa. No member of the maternal or paternal families had been subject to hæmorrhages. The pregnancy was auspicious; the labour, though a little difficult, was not more so than is common with primiparæ; the twins were neither pale nor plethoric, they were sufficiently strong; the placenta and the chord presented nothing remarkable; and the meconium was not long in being evacuated. In fact, there was no assignable cause, predisposing or accidental, excepting the probable exaggeration of the vascular network of the intestine; and, perhaps, the tumefaction of the spleen, observed in one of the children by the distension of the left hypochondrium, can afford a satisfactory explanation of the hæmorrhage.

The symptoms and progress of the disease in the twins, presented great similarity. The only difference consisted in this,—that the elder had intestinal hæmorrhage only, and that of very short duration; while, in the second, it was longer, and gastric as well as intestinal. In spite of the abundance of the sanguineous discharge, the celerity with which the infants became re-established was remarkable; and the quickness with which the gastro-intestinal mucous membrane resumed its natural functions, was very striking. Twenty-four hours had not elapsed till digestion, in the elder, was completely re-established; a fresh proof that the affection is neither the result of the rupture of a vessel, nor of any serious alteration of the mucous membrane. The prompt restoration of the assimilative function points out to the practitioner the impropriety of allowing the infant to be long without nutriment; a point which, if neglected, might cause the little patients to perish from syncope or inanition.

The recovery of the twins was complete and satisfactory: they had no relapse. A paleness certainly remained for a long time, as an evidence of the excessive hæmorrhage.

When one of the twins was vaccinated, an abundant flow of blood issued from the prick of the lancet. This symptom of a predisposition to hæmorrhage, is worthy of special notice. I believe that those infants who have such a tendency, but have the good luck to escape melæna, ought to be preserved from the risk of blows, scratches, the application of leeches or blisters, the evulsion of teeth, and, in a word, from all those causes capable of bruising the soft parts, and abrading the skin or mucous membrane.

It is not easy to say why, in some children, recovery should be complete; and why, in others, the loss of blood should be followed by a state of chlorosis and debility. From an examination of the facts, I am led to believe, that when the complaint is in a state of chronicity, there exists especial danger in such children as are ill-fed, congenitally feeble, or the offspring of unhealthy parents. Dr. Rahn-Escher's patients were extremely delicate, and ill supplied with aliment; for, in place of receiving their nourishment from a good nurse, they were fed on soups and cow-milk.

III. Symptoms.—The precursory symptoms are thus described by Dr. Rahn-Escher:—An infant, on the day of its birth, slept almost continually; he changed his colour frequently; was seized with convulsions of the limbs and muscles of the face; deglutition was difficult, and often excited nausea. On the following day, hæmorrhage set in. In another instance, slight agitation expelled the colour from the whole body, but especially from the face; and, beyond this, there were no symptoms of approaching disorder. Another infant was seized, four days after birth, with yellow watery stools, convulsions, paleness of countenance, and great prostration of the vital powers; respiration was spasmodic; the abdomen was very slightly tympanitic, but without heat or tension; he appeared to have a little pain, especially before each evacuation. The bleeding showed itself upon the evening of the same day. When hæmorrhage has once set in, it is almost invariably very abundant. The infants may be said to swim in blood; their linen is soaked in it; the stools follow at near intervals, and contain a great quantity of blood, which is frequently well coloured, and rich in crassamentum, and sometimes liquid, or at other times mixed with numerous large clots. The first stools may be composed of a mixture of meconium and blood; but those which follow, almost always consist of pure blood. Hæmatemesis is rarer than hæmorrhage; but perhaps it is also more considerable: children have had from eight to twelve attacks of vomiting of blood. Etlinger quotes the case of a little patient who passed more than a pound of blood in vomiting and in stools. Though the hæmorrhage is generally abundant from the commencement, yet sometimes, for one or two days, simple striæ and stains of blood are seen in the linen. Vomiting, along with bloody stools, is a little more frequent than intestinal hæmorrhage; the former being in the proportion of 8, and the other of 7 to 15. In the cases which I have perused, hæmatemesis never existed alone. Sometimes it was more abundant than intestinal hæmorrhage, but it always accompanied it. Hesse gives two cases in which there was only hæmatemesis.

The hæmorrhage usually attains its maximum at a variable period within the first twenty-four hours of life, and ceases upon the first or second day; but it may continue up to the fifth day, and even later. Such cases, however, are rare. The following is an analysis of seventeen cases:—

No. of cases.	Duration.	No. of cases.	Duration.
1	Nine hours.	1	Five days.
3	One day.	1	Seven days.
1	Thirty-six hours.	1	Eight to ten days.
9	Two days.		

A large and prolonged loss of blood, in a being so fragile as the newly-born infant, cannot take place without the whole system being profoundly involved. At the moment when the hæmorrhage takes place, the infant becomes deadly pale. The pallid hue is accompanied by coldness of the extremities, debility, loss of plumpness, extreme smallness of pulse, inequality of respiration, and occasionally convulsions. There are almost no local symptoms, excepting inability to suck; there is nothing remarkable in the state of the mouth or abdomen, the latter being neither painful nor distended.

Dr. Rahn-Escher has insisted much upon another series of symptoms, the consequence of enormous loss of blood. The subjects of the cases collected by him remained lean, pale, bloated, weak, flabby, very prostrate, affected either with diarrhœa or constipation, and subject to convulsions. One had symptoms of rachitis; another sank from tabes mesenterica and hydrocephalus, at the age of one; and a third, when one year old, was not re-established, still preserving a deadly paleness.

IV. Prognosis.—In analyzing the cases of authors, I have satisfied myself that perfect recovery was more frequent than any other result. The fol-

lowing figures throw some light upon the measure of seriousness of this disease. It is to be observed, that the cases of Billard are not embraced in this *résumé*.

In twenty-three cases, in which mention is made of the termination of the disease, the issue was good in twelve, and bad in eleven. Nine of the first class of infants were completely cured; the three other cases lapsed into cachexia. Of the eleven which died, death took place rapidly in nine, and slowly in two. It appears, then, that we cannot adopt, as literally true, the words of Pechlin, though nevertheless they contain something of the truth: "*In pueris, et alvi et renum cruentas fluxiones minus adhuc habere periculi, et impunè ferri trepidantibus ad cruoris præsentiam matribus.*" Hesse maintains that, in certain cases, the hæmorrhage may be considered as the salutary crisis of a plethoric condition. He believes that the melæna of infants is not more serious than the melæna of adults; an opinion in which I cannot concur. To compare infantile melæna with melæna in adults, we must select cases, in which the hæmatemesis and intestinal hæmorrhage constitute the whole disease, and are not mere symptoms of a cancer of the stomach, of an organic affection of the liver, or of a deterioration of the blood, such as we see in severe eruptive, typhoid, or yellow fevers.

When hæmatemesis takes place in the adult, without the existence of the morbid conditions specified, there is almost always a restoration to health, however abundant the hæmorrhage may have been. I have seen adults vomit several pounds of blood, and rapidly recover. Dr. Odier, a celebrated physician of Geneva, in his *Manuel de Médecine Pratique*, 2nd edition, remarks, at p. 121, "In general, melæna, such as we see in this place, however frightful in its aspect, is never a very dangerous disease, unless some complication exist."

V. Diagnosis.—The diagnosis is not always so very simple as might be imagined. The hæmorrhage may be internal; in which case it is only by studying the general symptoms, that one can make out the nature of the disease. Sudden paleness, smallness of pulse, and debility, may lead us to suspect that hæmorrhage has taken place; but there is nothing to prove that the bleeding is from the intestines. On the other hand, when the hæmorrhage is external, it cannot always be traced to the gastro-intestinal canal. Hesse has treated this subject very minutely; and we cannot do better than quote, almost textually, his description. He speaks of two kinds of hæmorrhage: the one true, and the other false, viz., *hæmatemesis et melæna vera*, and *hæmatemesis et melæna spuria*. The first of these is that which we have described; in the second, the blood comes from the supra-diaphragmatic portion of the alimentary canal. In the latter, the accumulation of blood in the stomach or intestine, may be the result of different causes,—viz. 1st, Operations on the mouth, the nose, or the pharynx, such as the operation for hare-lip, or division of the frænum of the tongue, when performed by inexperienced persons; 2nd, Spontaneous hæmorrhage from the mouth, pharynx, nasal fossæ, bronchial tubes, or lungs. All these kinds of hæmorrhages, with the exception of epistaxis, are very rare in early infancy; but, according to Brebis and Vogel, they may be the result of compression of the neck during difficult labour. 3rd, Swallowing of blood by the infant during birth. This cause was noticed by Bargel, an old observer. Schmitt makes a similar remark. Stellwag has seen a new-born infant, (whose mother had had hæmorrhage during its birth,) with blood, not only in the mouth, but also in the intestine, mingled with the meconium. Finally, the blood may proceed from the mammæ of the mother or nurse, when they contain little milk, and the infant sucks with avidity; or the blood may be drawn from excoriations of the mammæ.

The diagnosis, though very simple when the blood in the stomach is the

result of a surgical operation, or of sucking, is sometimes more difficult when it proceeds from spontaneous hæmorrhage from the nasal fossæ, or the supra-diaphragmatic part of the alimentary canal; but in new-born infants this is an extremely rare form of hæmorrhage. When there is doubt, one of the best means of distinguishing true from false melæna, is to study thoroughly the concomitant and consecutive symptoms. In the false, they may be said to be absent, or advantage may seem to arise from the hæmorrhage; whereas, in the true melæna, the serious consequences are observed, which I have already enumerated.

VI. TREATMENT.—The cases which have enabled me to give a nosographic sketch of this disease, are very incompletely reported, as regards the treatment. In several instances, there have merely been administered soothing or gently laxative preparations, such as oil of sweet almonds and manna. This plan must have been adopted with a view to allay irritation of the mucous membrane, and to remove acrid matter from the bowels. In other cases, the treatment has been that directed against hæmorrhages in general, such as the use of the mineral acids, cold, and astringents. Dr. Rahn-Escher gave to one patient diluted sulphuric acid in cinnamon water, and to others he administered an emulsion, containing alum and musk, ordering, at the same time, fomentations of vinegar and quinine: cold compresses to the belly and astringent clysters have also been used. In my cases, their employment constituted the only treatment.

To sum up, I believe that, in the almost entire inability to moderate, by means of internal remedies, any considerable amount of hæmorrhage, we must be contented to place the infant in a cool and frequently changed atmosphere, and to apply the cold compresses to the belly, whilst the extremities are kept in a state of comfortable heat. Clysters appear to be useless: they fatigue the child, and are apt to cause stools; and, even when this latter result is obviated, they operate at a great distance from the seat of the disease, and which is in the large intestine. If the pulse be very feeble, and the infant be threatened with syncope, there may be given some drops of wine, a little of the liquor of Hoffmann, peppermint water, cinnamon water, or other suitable stimulant. Perhaps urtication might prove beneficial. In all cases, it is necessary to sustain life by giving some spoonfuls of woman's milk cold, or by placing the child to the breast, if it have strength enough to suck: one or other must be done, even before the hæmorrhage has been completely stopped. For symptoms of anæmia which may succeed, it will be necessary to subject the infant and his nurse to a somewhat lengthened course of chalybeates.

DR. DELASIAUVE ON THE TREATMENT OF EPILEPSY.

The *Annales Médico-Psychologiques*, for March 1848, contain the conclusion of an article on the above subject, by Dr. DELASIAUVE, physician to the Bicêtre; from which we extract the following practical summary.

The *hygienic treatment* of Epilepsy is of equal importance with, if not of greater than, the medical, in order to diminish the frequency of the attacks, and thereby weaken the periodical necessity for their recurrence. Change of climate (recommended by Hippocrates), is not always practicable; but when possible, a mild temperate region, not much exposed to changes of weather, should be preferred. It has been observed, that epileptic attacks are more frequent in the hottest and coldest seasons, or when there are sudden or frequent changes of temperature.

The dietetic regimen is, without doubt, of the greatest importance in the hygienic treatment of epilepsy. Galen interdicted all aliments of a viscous or flatulent nature, or which could induce a determination of blood to the head, as well as wine. Tissot considers moderation in diet as the basis of cure; and says, that an abundance of aliment is poisonous to epileptic patients. The

substances which he prefers are white meats, fresh-water fish, leguminous plants, the most digestible farinaceous food, perfectly ripened fruits, and sometimes a little tender beef or mutton: he rejects those meats which produce much blood of a highly stimulating quality, as well as eggs, pastry, fried meats, goose, duck, pork, and fat salt meats in general, eels, skate, haddock, craw-fish, truffles, artichokes, asparagus, celery, and parsley. The only drink which he allows is water: and he says that several patients have become incurable, from not having abstained from wine. The opinions of Galen and of Tissot are followed by most authors,—who differ more in the details, than in the general principles.

The diet is naturally susceptible of numberless variations, depending on the temperament or idiosyncracy of individuals, their constitution, and their usual mode of living. It is certain, however, that food, excessive in quantity, or of too stimulating or nutritious a nature, is liable to produce a greater frequency of attacks, by imparting to the blood a dangerous state of excitability. This is especially observed at the Bicêtre, in those patients who have been permitted to visit their families, and have there had an opportunity of indulging their appetites.

The author believes, with Tissot, that the diet of epileptic patients should consist rather of vegetable than of animal food, especially fresh leguminous plants, refreshing fruits, and prunes. Total abstinence from wine he considers too rigorous a privation; and it is sometimes administered, without detriment, to his patients. It should be of the mildest quality, and taken in moderation. The most usual drinks, in the Bicêtre, are cold milk, skimmed milk, with sugared water, lemonade, whey, and other refreshing liquids; small beer does not appear to have been tried, although its nutritive and diuretic properties would seem to render it useful as an ordinary beverage. Persons who are liable to be attacked at night should take a very light evening meal, so as not to increase the state of cerebral plethora, so favourable to an attack, and which sleep always tends to produce.

It is a point of great importance that the free exercise of the corporeal functions should not be neglected; and especially that the cutaneous exhalation should be maintained in a healthy condition, so that the blood, being determined to the exterior of the body, congestions may not form in the internal organs. Cleanliness should be particularly attended to: and baths and frictions of the surface from time to time employed. The clothing should be sufficiently warm, but permitting the skin to be comfortably moist, and not impeding the free motion of the limbs. Tight cravats, and those prisons which are called stays, must be avoided as highly injurious. The hair should be cut short; and straw hats should be worn, as they offer no impediment to the passage of air or perspiration. The patient should sleep on a pillow of sufficient height to facilitate the return of blood from the head, and to prevent congestion.

The state of the digestive functions demands great attention. Constipation is injurious, as it reacts on the encephalon, and the straining which it necessitates are productive of harm. It is to be treated by clysters and gentle laxatives, such as veal broth with herbs, Seidlitz water, and prunes.

The menstrual periods in women are liable to be attended with an aggravation of the epileptic symptoms; and the catamenial flow should be aided by the application of leeches to the vulva, fumigations of the sexual organs, and mild emmenagogues. Abstinence from sexual intercourse is imperatively necessary in males, for the analogy between the nervous excitement attending this, and the state of emotion which causes epileptic attacks, is very close. Those who practise masturbation are peculiarly liable to attacks; and a case is given by Dr. Delasiauve, showing the effect of sexual intercourse in repeatedly reproducing epileptic fits, even after apparent recovery.

The life of epileptic patients should be tranquil, and free from troubles; and anything tending to excite the mental emotions should be strictly

avoided, as having a tendency to increase the intensity of their disease. These unfortunate persons are generally susceptible and irritable, especially at the commencement and end of their attacks: their attendants, therefore, require to exercise extreme care in their management. By kindness and good management, the excessive mental agitation which they experience may be moderated, so as to enable them to pass insensibly over these critical moments; but by brutality and rigour, the violence of their malady is almost certainly increased.

Exercise is highly salutary for epileptics. An inactive, sedentary life, weakens the organism, and increases the morbid predisposition. Sufficient attention does not seem to have been paid to this subject by modern authors, although Hippocrates, Galen, and most of the ancients, attach great importance to it. Tissot and Portal scarcely mention it. The opinion of Esquirol, not altogether unexceptionable, is expressed in the following words:—"He (the epileptic person), should devote himself to agriculture, should ride on horseback, and exercise himself with gymnastics, swimming, and fencing." Among modern authors, M. Ferrus has paid most attention to the hygienic influences which we have mentioned; and he is especially partial, among these, to agriculture and gardening. These labours have not only the advantage of promoting intercourse between the patients and their fellow-men, and of calming the passions of the mind; but they also diminish the erethism of the nervous system, by the refreshing exposure to the sun and air. The beneficial effects of this treatment in cases of mental alienation, and especially in epilepsy, was most remarkable at Bicêtre, when it was substituted for the pernicious state of idleness in which the patients were formerly kept. Not only are the good results of corporeal labour observed in hospital patients, but also in private practice, among patients of a higher rank in life; and M. Ferrus relates some cases, in which the happiest results were produced by labour, joined with change of climate.

M. Ferrus does not regard the advantages which result from exercise, as exclusive of all other hygienic measures. In the Bicêtre, he introduced various reforms, such as not permitting the patients to go out, and indulge their appetites, whenever they pleased; and introducing variations in the diet, to suit the peculiar constitution of each individual. All kinds of exercise are not equally proper; riding, swimming, and even fencing, recommended by Esquirol, are not without danger. The same objection applies to those labours which require excessive exertion, or the stooping posture, or exposure to excessive heat or light.

It is important, moreover, that the labours in which epileptic patients are employed should vary, and be followed by intervals of relaxation. Intellectual and artistical occupations, as reading, drawing, music, light compositions, the elements of certain sciences, as chemistry, botany, physics, etc., are, when not carried to the extent of fatiguing the brain, productive of satisfaction; and, far from weakening, they sustain the moral powers. They change the gloomy and irritable feelings into gaiety and calmness, and diminish the predisposition to epileptic attacks.

These hygienic modes of treatment have hitherto not been sufficiently appreciated, and have not yet been perfectly carried out. More attention has been paid to the medicinal treatment; but important improvements have been made in this respect within the last few years. At the Bicêtre, especially, much good has been effected; but the beneficial measures above mentioned, have not been capable of being fully carried out, owing to the impracticability of classifying the epileptic patients, and separating them sufficiently from the other inmates. In the department occupied by the children, however, much happier results have been produced. With them, the whole day is occupied in an alternation of work and play, at fixed hours. In school, they are divided into classes, according to their capability, under the direction of a master, M. Vallée, of equal zeal and ability, and intelligent assistants.

Those who are able, read, write, study arithmetic, geography, grammar, drawing, painting, etc. Those who are less advanced, are instructed in the more elementary branches; and they are gradually brought to discern the sensible properties of bodies, colours, sounds, smells, tastes, shapes, etc. Marching, drilling, music, and dancing, form part of the education; and concerts are frequently held. By due alternation of intellectual exercise with labour and amusement, the over-working of any of the powers, mental or bodily, is avoided, and they pass from one to the other with a sort of ardour.

The utility of this mode of treatment has been questioned by some, who, wrongly supposing that the partisans of education hope to fill up the chasm which separates these degraded beings from ordinary men, are contented with always perceiving an abyss between the two states of being, which would nullify the value of education. But no one pretends anything so absurd; that which already exists can only be modified. Is it to be said, because the idiot, deprived more or less of mental faculties, and of the means of acquiring common ideas, cannot be raised by education to a very high position in the scale of humanity, that no useful change can be effected in him? In the midst of his deeply degraded state, the idiot preserves his senses and physical strength often equal to that of other men; he has also instincts and moral feelings, and artistical powers, more or less developed. From the germs of these powers, by multiplying external impressions around the idiot, some sentiments of sociableness may be developed, and he may be brought, by imitation and experience, to practise several manual arts. Gymnastic exercise is of great utility in weakening the force of the brute passions, and correcting the irregular appetites. By communication with the surrounding world, and by the mutual relation between the idiot and those to whom his education is intrusted, his sluggish imagination is roused to notions of good and evil, of pleasure and pain; and the kindly feelings, and a sense of his own importance, are developed. From being an embarrassing burthen to society, he becomes supportable, and even useful. Thus an immense amount of good is effected.

This system of educational treatment is doubly advantageous in epileptic children. The moral and physical expansion of their faculties tends to diminish the intensity and frequency of the attacks; and no less, by equalizing their influence, to remove the state of torpor into which the patients are thrown, to overcome the feeling of gloom and irritability which is caused, and to prevent the threatening depression of the muscular powers. In the Bicêtre, may be witnessed the changes which have been effected in the condition of epileptic children, since the introduction into that establishment, within the last four or five years, of labour, study, gymnastics, and various amusements. At present, those most afflicted with fits, are merely regarded as patients confined to bed by indisposition, and prevented from joining in the common exercises. In most of the others, the attacks only appear at greater or less intervals; their countenance has lost its gloomy expression, their manners have been softened, and their mischievous, angry, and quarrelsome dispositions have been replaced by tranquil and benevolent feelings. Some of these patients, apparently cured, even perform independent services in the house.

Not a little of the value of these exercises is derived from the children being together, and from the salutary emulation, which tends to stimulate the most sluggish; while isolation and solitude, on the contrary, deprive the mind of its resources. A striking example of this is shewn in the case of a boy residing in the neighbourhood of the Bicêtre, who was seized with epileptic attacks three or four times a day. No benefit seemed to result from any kind of treatment, though rigorously persevered in for a month, until permission was obtained for him to be admitted, during the day, into the school of that institution. At the end of six weeks the attacks had entirely ceased, and he recovered his usual good condition and vivacity.

Such results are worthy of attention, and tend to shew the importance of keeping the mental and bodily faculties of epileptics in a state of activity. It appears, however, to be not always an easy matter to attain this end; for, in the departments of France, the doors of asylums are closed against epileptic patients. Dr. Delasiauve remarks, that the formation of private establishments would be desirable for those whose station in life is opposed to their seeking aid from hospitals. Many epileptic patients in the higher ranks of society have their disorder aggravated by idleness.

The necessity for the existence of such establishments as are here proposed, was not so evident, as long as the treatment of Epilepsy was confined exclusively, so to speak, to therapeutical means: patients could receive attention at home. They become, on the other hand, reasonable and indispensable, from the moment that the system comes into operation, which regulates, by wisely-contrived combinations, the labours of the different periods of the day, and derives its chief effect from the association and mutual relations of the individuals, to whose treatment the combination of means at disposal is applied.

Treatment during the Fit.—In most cases, as is observed by Tissot, the treatment is reduced to taking care that the patient do not hurt himself; at least, less attempt is made to retard the epileptic paroxysm, than to bring the patient safely through it. One of the first things to be attended to is, to remove the epileptic from the danger of a fall on a hard substance, or in a dangerous place. He should be laid horizontally on a bed,—this position affording the greatest facilities for restraining him. It does not appear so necessary to hold his hands as is generally imagined, for he scarcely possesses the power of directing against himself movements of which he is not conscious. A more important point to be attended to, is the removal of clothes, cravats, etc., which, by impeding the action of the organs of circulation or respiration, may tend to cause cerebral or pulmonary congestion. The head should be elevated on two or three pillows, to diminish the flow of blood to that part. It is well also to incline the patient to one side, to facilitate the escape of saliva, which is poured out in great quantity into the mouth, and would threaten an impediment to the passage of air into the lungs. Beds have been contrived, with cushioned boards projecting several inches above the level of the coverings. When placed in these there is less danger of the patients falling out, or injuring themselves in their convulsions. But inconvenience may arise from their being hidden from the view of their attendants; for some epileptic patients have a tendency to turn on their faces on the approach of the paroxysm, and may thus perish of asphyxia without being perceived. Epilepsy frequently terminates life in this manner. The danger of laceration, or even amputation, of the tongue, is to be guarded against. The best means is to insert something between the teeth at the time of the attack,—such as a wedge of wood, or a piece of linen, such as a handkerchief or napkin, rolled sufficiently firm. It would be proper, in hospitals, to observe those individuals who have this propensity, and to give their attendants the necessary instructions for preventing it: but the evil is often accomplished before the means for its prevention can be employed. It is vulgarly thought necessary to forcibly open the thumbs. This is of no manner of use; and is even dangerous, by reason of the efforts which are often required to overcome the resistance of the patients.

To favour the return of the epileptic patients to consciousness, recourse has been had to strong scents, to ammonia, ether, assafœtida, etc.; sternutatories have also been used. In general, these means have been condemned as useless, and likely to produce mischief. "To be convinced of their danger," says Tissot, "one only has to remember that sneezing commences by a suspension of the respiratory act, which accumulates the blood in the vessels of the head, where there is already too much; and that, moreover, this movement itself is a convulsion, which by no means conduces to the

cessation of others." Portal, however, thinks that no harm can arise from making the patient smell the fumes of burnt feathers or leather, simple or aromatic vinegar, tincture of castor, assafœtida, etc.

But the attention of the medical attendant should be especially directed to the subsequent symptoms. Ordinarily, these are confined to a sense of fatigue, of weariness, and weight in the head, and disappear of themselves with the aid of rest, some calming or cordial drink, and pediluvia with mustard; but they often require more energetic treatment. Very frequently, attacks of Epilepsy induce congestions of the brain or lungs, and dangerous, or even fatal, apoplexy. In these cases, especially where the attacks consist of a number of frequently repeated paroxysms, the indication is to practise large bleedings; and it is not generally known to what an extent these may be borne. Leeches and cupping may be useful as aids to general bleeding, but are of themselves insufficient, except when the attacks are so mild, as to cause no apprehension of a fatal termination. Purgatives and enemata are slow and uncertain in their effects. Dr. Delasiauve has generally seen benefit derived from tepid baths, repeated several times a day, for two hours at a time. External revulsives must not be neglected,—such as sinapisms, or large flying blisters, which powerfully aid the effects of depletion. The utility of cold applications seems doubtful; they are certainly beneficial in acute affections of the brain; but there is only a very distant analogy between these, and the comatose state which succeeds epileptic convulsions.

ANÆMIA AND ITS CONSEQUENCES.—ENLARGEMENT OF THE THYROID GLAND AND EYE-BALLS.—ANÆMIA AND GOITRE, ARE THEY RELATED?

Dr. James Begbie, of Edinburgh, has communicated a very valuable memoir, with the above title, to the *Edinburgh Monthly Journal* for February, 1849, p. 495. The author proposes to answer the question,—"*Are Anæmia and Goitre related?*" by a review of cases which have come under his own observation: but he introduces them by some general statements, strongly tending to confirm the idea that the two affections are related. He states, for example, that in countries where bronchocele prevails in an endemic form, the exsanguined countenances, protuberant eye-balls, and other signs of bloodlessness manifested by those affected with the bronchocele, render it probable that both are effects of the same cause,—Anæmia. Bronchocele, we are also told, develops itself rapidly during confinement in child-bed, and undergoes a temporary augmentation during the flow of the menses. Dr. Parry has often seen goitre follow functional disorders of the heart,—disorders known to depend very frequently on deficient sanguification. It is a form of the *hydrophthalmia* of systematic writers—perhaps that form of dropsy denominated *buphthalmos*, or *ox-eye*, which accompanied the enlarged thyroid gland as a concomitant symptom of Anæmia, in the cases related by Dr. Begbie. He found this enlargement of the globe of the eye, the result of congestion and effusion, intimately connected with that condition of the system in which the blood is deficient in fibrin and colouring matter; and yielding to a plan of treatment adapted to such a state. We subjoin the cases without much abridgment.

"Case I.—A lady, aged thirty-two, one of a numerous and healthy family. Married at the age of twenty-four, and continued to enjoy for many years a full share of health. She had never been pregnant. For some years before I saw her, she had suffered from continued mental distress, and had laboured under profuse leucorrhœa, by which her general health was much affected. For the last four or five months she had complained of inordinate pulsation of the heart, which was greatly increased by excitement, by going up stairs, by walking fast, by every thing, in fact, which hurried the circulation. At these times her face, usually pallid, flushed, and she became confused. The

eyes presented an unusual appearance, being prominent and staring, giving a wild and startled expression to the countenance; a much larger share of the albuginea was seen than in the normal condition; the membrane looked dark at a distance, and when examined near, was found to be pervaded by vessels—many of these were also seen apparently in the sclerotic coat itself when examined through a lens; there was no dimness of vision, but a painful sense of distension of the eye-balls; all this was increased on the occasion of palpitation, or when the face was flushed. Simultaneously with the appearance of these symptoms, an enlargement of the thyroid gland manifested itself It was soft, smooth, and elastic, and of equal character throughout, presenting the form of the hypertrophied gland, and had rapidly developed itself to its present size—that of three or four times the magnitude of the gland in health; but it was subject to remarkable variations in this respect, according to the state of mind, rest, or palpitation. It appeared to be highly vascular, and conveyed to the touch the sensation of an erectile tumour. It had suffered no diminution from the continued application of iodine. The pulse at this time generally ranged from 100 to 130; it was small and jerking, and, on the occasions of excitement, accompanied by a thrill. The inordinate action of the heart was felt beating in the head, so as to produce a state of almost constant watchfulness. There was much breathlessness and frequent faintness, severe headach, vertigo, and tinnitus aurium. The contraction of the ventricles seemed somewhat prolonged, and it was attended, especially under palpitation, by a soft bellows-murmur at the aortic orifice, and a corresponding *bruit* was heard in the carotid and other large arterial trunks; there was no extended præcordial dulness, neither was the impulse of the heart very remarkable. Along with these symptoms there was a high degree of nervousness, and much derangement of the digestive functions. The catamenial discharge was imperfect and irregular. A variety of treatment had been for some time pursued for the relief of these symptoms. Blood-letting had been resorted to, with that measure of benefit which Dr. Marshall Hall has so well described and accounted for in such circumstances,[1] digitalis, mercury, etc., but all in vain. The appearances and signs were manifestly those of impoverished blood; and, in accordance with this view, treatment was adopted, which, after many months, issued in restoration to health. It consisted of large doses of the carbonate of iron, with gentle aloetic purges, soothing doses of hyoscyamus, a full diet of animal food, a change of air to the sea-side, and regular passive exercise in the open air. Under this plan the general system gradually became renovated, the leucorrhœa subsided, the goitrous swelling disappeared, the eyes regained their wonted character, the complexion its accustomed hue, and the heart and arteries their normal heat.

"Case II.—I was consulted by Dr. Beilby, in the winter of 1846, in the case of a lady aged thirty, married, and the mother of two children. The commencement of her illness was marked by long-continued and frequent hæmorrhage from internal piles, often for weeks together, to the amount of 5 or 6 oz. daily, and extending over a period of between three and four years, during a long period of which she had been subjected to much anxiety. The hæmorrhage at last ceased on the occurrence of an abscess near the anus, and never returned; but it left her exsanguine. She had too long disregarded the repeated loss of blood, and only became alive to her situation when her attention was arrested by the violent palpitation of the heart, with throbbing and giddiness of the head, which occurred almost immediately on the cessation of the hæmorrhage. The catamenia continued regular. On my first visit, twelve months after the appearance of these symptoms, the large and prominent eyeball, which I cannot well describe, but which once seen cannot be readily forgotten, the dark discoloured eyelid, and the pallid complexion which bespeaks poverty of blood, induced me to examine the thyroid

[1] On Loss of Blood. Med. Chir. Trans. vol. xiii, p. 140.

gland before listening to the heart's action, or feeling the pulse at the wrist. It was tumid and hypertrophied, especially the lateral lobes, which were enlarged to four or five times their normal bulk, and had long resisted the use of iodine, which had been administered in large measure, and, according to the experience of the patient, with manifest disadvantage. The tumour, as in the former case, was subject to remarkable variations, according to the state of the circulation, augmenting and decreasing as excitement or rest prevailed. She felt very sensitively the marked change in her expression, from what she termed the protruding eyes, and experienced at the same time great discomfort from the sense of pressure, as if the eyeball were too large for the orbit. I need not repeat a description of the symptoms—the throbbing of the head, the ceaseless impulse of the heart, the anæmic murmur of the ventricle, the continuous rushing sounds in the veins of the neck and in the thyroid swelling, the whiff of the carotids, or the jerking of the pulse at the wrist. One set of symptoms I may notice in the words of the patient herself:—'A very painful sensation was experienced on leaving the horizontal posture, violent cough came on, causing retching and an agonizing pain in the head, seemingly caused by an extreme rush of blood to the brain, with a sense of bursting. This was relieved on resuming the horizontal posture, and taking food. As a preventative, I was forced for some months to breakfast immediately on awaking from sleep, lying perfectly still in the posture in which I awoke, as even a slight raising of the head would occasion distressing pain. After eating I could rise with impunity.' These are manifestations of the enfeebled brain, and part of the train of symptoms induced by impoverished blood. Nothing remained but to recommend the simple, safe, and satisfactory treatment of the former case. It was begun, and persisted in for some time, and attended by beneficial results; it was interrupted, however, from various causes, so that the success has not been equal to its known efficacy. Still, however, at this time the patient is manifestly improved, the thyroidal swelling is greatly reduced, the protruding eyeballs much less conspicuous, and all the signs which accompany the anæmic condition gradually disappearing. She can walk many miles without breathlessness, and lie down and rise up without pain or confusion.

"Case III.—A third sufferer from anæmia and goitre, I have at this time under my care, in the person of an unmarried lady, aged fifty, who had for a long series of years enjoyed perfect health, till about four years ago, when she became the subject of dyspeptic and uterine derangement. For many months she laboured under profuse and wasting leucorrhœa, when the protracted drain was followed by distressing palpitation, hurried breathing, rapid, feeble, and jerking pulse, pallid complexion, varied by flushing on the least excitement or exertion, great nervousness, disordered secretions, the characteristic eye, and the hypertrophied thyroid of this form of anæmia. The isthmus of the gland was more prominent than in the former cases, but the bulk of the tumour was less than in either. She had undergone a variety of treatment, with varying success, for some years before I saw her for the first time, two years ago. At that time she was chiefly anxious regarding the protuberant eyeballs, and little concerned about the goitre or her general health, which she had begun to think did not admit of remedy. The general and physical signs were those of anæmia; and, believing that the local affection would yield to constitutional treatment, she was immediately placed under full doses of iron (the citrate was the form employed), full diet of animal food, and a moderate share of Bass's ale. She improved rapidly, but was seized in the autumn of 1847 with severe dysentery, then epidemic in the city. Through this ordeal she struggled, and after a tedious convalescence she regained her former position; the goitrous swelling and the projecting eyeballs appeared to suffer no change during this long illness, neither was the anæmic murmur of the heart and arteries affected by it. She resumed her former treatment, which had been interrupted by the attack of

dysentery; and now, at the close of another twelvemonth, she is greatly improved in health, the thyroidal swelling is scarcely perceptible, the protuberant eyeball much reduced, the pulse, though rapid and feeble, and still easily affected by exciting causes, greatly moderated, and the breathing much more natural. There are no contra-indications to the continued use of iron and animal food; and a confident expectation may be entertained, that, under the persistent employment of them, the functions of assimilation and sanguification will be restored to health, and the local disorders now dependent on their morbid condition, entirely removed."

Dr. Begbie refers to a paper in the *Dublin Journal of Medical Science*, vol. xxvii, p. 200, entitled, "Observations on a peculiar form of Disease of the Heart, attended by Enlargement of the Thyroid Gland and Eyeballs", by Dr. R. Mac Donnell; also, to Mr. Hill's remarks on that communication (*ibid.* p. 399); and to Sir H. Marsh (*Dublin Journal*, vol. xx, p. 471); and Dr. Graves' remarks (*Clinical Lectures*, II, 193) on similar cases. Dr. Begbie claims these cases as illustrations of anæmia, and thinks the Irish physicians have erred in regarding them as examples of a peculiar cardiac disease.

With regard to the treatment of anæmia and its secondary disorders, Dr. Begbie makes the following remarks:—"Our first object, in the treatment of anæmia and its secondary disorders, is to ascertain the exciting cause, and having arrested or removed this, to improve the condition of the blood by the free use of the preparations of iron, and a liberal allowance of animal food, unless there are complications of such a kind as to contra-indicate their use. Wine is seldom necessary, and generally hurtful; but porter or ale may be taken with advantage. A change of air, travelling, and passive exercise, also do good. Persistence, however, is absolutely necessary both on the part of the patient and his attendant. *Iron*, the chief means of cure, in order to be effectual, must be continued for months, and perhaps, after an interval, again and again renewed. It will not, however, disappoint our expectations; for whether it act by invigorating and improving the digestive and assimilative functions, or by restoring and augmenting the red particles of impoverished blood, there is really no remedy in the hands of the physician, whose virtues have been so thoroughly tested, and so deservedly recommended to our confidence and trust."

PATHOLOGY AND TREATMENT OF SENILE DEAFNESS.

Mr. Joseph Toynbee has contributed an important paper on this subject to the *Edinburgh Monthly Journal* for February 1849, from which it appears very probable that the deafness of old age is not the mere effect of decay. He says: "The results of my experience tend to show, that decline of the power of hearing in old age is dependent upon the influences to which aged persons are frequently subjected: namely, the prolonged stay in warm and close rooms, the avoidance of the open air, the cessation from bodily exertion, the want of attention to diet, and to the healthy performance of the functions of the skin; and that it does not depend upon the decline of nervous power, or upon an atrophy of the tissues which compose the organ of hearing. On the contrary, an extensive field of post-mortem investigation has demonstrated, that the *most frequent* pathological condition found in cases of senile deafness, is a considerable increase in the substance of the mucous membrane lining the tympanic cavities; and that the evidences of atrophy of the tissues are very rare. The pathological condition *second* in frequency in these cases, is a thickening of the *membrana tympani;* and the *third* consists in the presence of bands of adhesions, which connect together various parts contained in the tympanic cavity, and these contents to the walls of the tympanum. The examination, during life, of elderly patients suffering from deafness, quite agrees with the results of the pathological researches. Thus, while the external surface of the membrana tympani remains smooth and shining, its substance is seen to be whiter than natural. Upon attempt-

ing a forcible expiration with closed nostrils, air is heard, by the otoscope,[1] to enter the tympanic cavity, but it produces an unnatural sound; the hearing is generally worse during an attack of cold, and in dull weather."

Mr. Toynbee details cases in illustration and confirmation of his views, of which the following are abstracts:—

"Case I.—Mrs. L., æt. 87, had been deaf for six years previous to her death.

"Dissection I.—*Right Ear.*—The external meatus was dry, and did not contain any cerumen. Membrana Tympani.—The fibrous layer is white, and slightly thickened; it is more concave and tense than natural. Tympanic Cavity.—The mucous membrane appears to be healthy. There are bands of adhesion which connect the ossicula with one another, and with the wall of the tympanum. These adhesions may be divided into two distinct sets: one is placed between the incus, and the inner wall of the tympanum and the stapes; the other connects the head of the malleus, and the body of the incus, to the external wall of the tympanum. The first-named set consists of two portions. One of these, measuring half-a-line from above downwards, and three-quarters of a line from without inwards, connects the anterior part of the long process of the incus, to that part of the inner wall of the tympanum which is posterior to the fenestra ovalis. This band is connected by several small ones to the superior surface of the stapes, and also to a fine membrane which extends between the two crura of the latter bone. These small bands are so firm, and tightly stretched between the stapes and the larger band, and between the incus and the inner wall of the tympanum, before mentioned, as to keep the stapes more fixed than natural. There are also adhesions between the upper surface of the crura of the stapes, and the margin of the *fossa fenestræ ovalis*. The other part of this band extends, from the posterior part of the long process of the incus, to the inner wall of the tympanum, posterior to that just described; this band is also firm and tense. The second set of adhesions passes from the head of the malleus, and body of the incus, directly outwards, connecting them to the osseous walls of the tympanum superior, and posterior to the attachment of the membrana tympani. It is interesting to consider what effect these bands must have had upon the ossicula and membrana tympani during life. Those which surround the stapes, and connect it to the *fossa fenestræ ovalis*, must have had the effect of impeding the movements of the stapes; and those which connect the long process of the incus to the inner wall of the tympanum, by pulling that process inwards, would probably have been the means of pressing the stapes (attached to its lower extremity) towards the vestibular cavity. The effect of the adhesions between the bodies of the malleus and incus, and the outer wall of the tympanum, seems to have been, to draw those extremities outward; and, in consequence, their inferior extremities inwards. This action upon the malleus is apparent, and may account for the greater concavity of the membrana tympani, which is carried inwards with the long process of the malleus, and is very tense. The base of the stapes is apparently fixed more firmly than natural to the margin of the fenestra ovalis. The membrane of the fenestra rotunda is in a natural state. The membranous labyrinth is healthy. There is rather more black pigment than usual in the cochlea of the left ear; in other respects it is like the right ear, and presents adhesions connecting the ossicula.

"Case II.—Mr. S. T. died at the age of 87, from an accident. He had been deaf—especially in the left ear—for a considerable period.

"Dissection.—*Right Ear.*—The meatus externus is distended with cerumen: the other parts of the ear are healthy. *Left Ear.*—The meatus exter-

[1] An elastic tube, twenty inches in length, each extremity having fixed upon it a piece of ivory or ebony: one orifice is introduced into the ear of the surgeon, and the other into that of the patient, while the latter attempts to make a forcible expiration with closed mouth and nostrils.

nus is full of cerumen ; the membrana tympani is smooth on its surface, but very white ; the mucous membrane of the tympanum is very thick, and the cavity contains a large quantity of dense and tenacious white mucus, which is also found in the mastoid cells. The presence of this fluid, and the thickened state of the internal coat of the membrana tympani, explain the white appearance of the latter. The stapes is entirely concealed by the thick mucous membrane.

"Case III.—Mr. B. C. died of asthma at the age of 80. He had been very deaf for a considerable period previous to his death.

"Dissection.—Both ears presented numerous bands of adhesion, connecting the membrana tympani with the inner wall of the tympanum; and, by completely surrounding the ossicula, the membrana tympani is nearly concealed. The eustachian tube is healthy throughout.

"Case IV.—Mr. J. R., æt. 73, died of consumption, and had been deaf for a considerable period previous to his death.

"In each ear the mucous membrane lining the tympanic cavity was so thick, as to conceal the stapes, and to form so thick an investment for the other ossicula, as to prevent their natural form being recognized.

"Case V.—Mrs. L. E. died of apoplexy at the age of 94. She had been deaf, for several years, in both ears.

"Dissection.—*Right Ear.*—The membrana tympani is entirely gone ; but a thick and soft portion of it lies in contact with, and adheres to, the promontory. The malleus has been removed by disease ; but the incus remains attached to the stapes, which latter bone is entirely concealed by the extremely thick mucous membrane. The lining membrane of the mastoid cells is also very thick ; and the upper osseous wall of the tympanum is diseased and soft. *Left Ear.*—The membrana tympani is thick and opaque,—especially at its posterior part. Its upper surface is firmly adherent to the inner wall of the tympanum and the stapes; the latter being entirely concealed by adhesions. The upper osseous wall of the tympanum is, in several places, carious, presenting large orifices, which allow the dura matter to be in contact with the thick mucous membrane of the tympanum and mastoid cells. One of these orifices measures three lines in length, and two in breadth. The posterior part of the pars petrosa presents a large exostosis. The labyrinthine humours are very small in quantity, and the membranous labyrinth is much atrophied. The base of the stapes projects into the cavity of the vestibule."

CLINICAL DETECTION OF IODINE.

It may be often of service to determine when certain medicinal substances have penetrated into the system ; and, as regards iodine, M. Rayer adopts a very simple procedure at La Charité. A strip of starched paper is moistened with the saliva or urine of the patient, and is then touched with nitric acid, with the effect of producing a more or less intense blue. As regards the urine, however, if the proportion of iodine employed has been very slight, the fluid requires to be evaporated to a 15th, 20th, or more of its volume. So treated, M. Rayer has detected iodine in the urine of a patient in whose case a simple iodine injection had been but once thrown into the knee-joint.—*Bul. de Thér.*, tom. xxxv, p. 410; *Brit. and For. Med. Chir. Rev.*, Jan. 1849.

SURGERY.

CASE OF INCOMPLETE REDUCTION "EN MASSE" OF AN INGUINAL RUPTURE.

By James Reid, Esq., Surgeon to the Kent and Canterbury Hospital.[1]

"The reduction of a hernia in a mass, with its investing peritoneal covering, by the efforts used in applying the taxis, and the appropriate mode of treat-

[1] From the Provincial Med. and Surg. Journal for 24 Jan. 1849, pp. 41-44.

ment, has, until the last few years, rested almost entirely upon the authority of foreign surgeons.

"Mr. LUKE was the first, I believe, in this country, to make the occurrence the subject of a particular treatise.[1] Since his excellent paper, founded on the experience of five cases, was read before the Medico-Chirurgical Society, and published in their 'Transactions', notices of three other cases have appeared in the English journals. The hitherto supposed rarity of the accident has therefore much diminished, and the influence that the probability of its occurrence should exert, during the investigation of an obscure case in which symptoms of strangulation exist, has become more recognized. Under present circumstances, however, every additional case may be viewed with interest, and may assist in confirming or elucidating the information already obtained upon the subject. It is with this view that I am induced to publish the following case of incomplete reduction 'en masse.'

"CASE.—J. H—, a strong active old man, aged 75, was admitted under my care, into the Kent and Canterbury Hospital, with symptoms of strangulated hernia. He had been subject to double inguinal rupture, partly occupying the scrotum, for which he had worn a truss forty years; and more recently to a protrusion, the size of a walnut, at the navel. The right inguinal rupture had appeared some few years after the left, and had troubled him most, having on one occasion become incarcerated for several days, occasioning constipation and vomiting, and being at length reduced with difficulty. Two days previous to his admission into the hospital, he exerted himself more than usual in spearing for eels; feeling afterwards indisposed, he went to bed sooner than usual, and was soon attacked with severe pain in the abdomen, followed by vomiting. He then discovered that the rupture had descended, and made ineffectual attempts to reduce it. The next day he renewed the efforts, applying for that purpose a hot tile, and making pressure upon it. After an attempt continued for some time, the swelling was reduced in size, and he considered that he had returned it, but the symptoms still continued. A medical man was now sent for, who detected a small swelling in the situation of the inguinal canal; an attempt was made to reduce it, and purgatives were administered.

"He was admitted into the hospital forty-eight hours after the occurrence of the first symptoms. The countenance was anxious; there was constant vomiting, accompanied by hiccough; the matter thrown up was the contents of the small intestine; the abdomen was distended, but not tender, except in the immediate neighbourhood of the right inguinal region; there had been no action of the bowels for forty-eight hours. Tongue stained by the matter vomited; pulse of natural frequency, full, intermitting; the radial artery felt ossified. About the situation of the right internal abdominal ring, there was a small diffused swelling, (better perhaps described as a fulness of the part), so ill-defined that it was said, at first, there was no protrusion; however, on comparing it with the opposite side, and pressing in the fingers around it, the tumour was more readily detected. Pressure upon the swelling produced pain, and caused it to recede; but it returned immediately upon the pressure being relinquished. A lump, feeling like a loose sac containing omentum, occupied and extended from the external ring.

"The taxis in the warm bath, a turpentine injection, etc., producing no change, an operation was determined upon. An incision was made opposite the internal ring directly over the swelling, and continued parallel to the inguinal canal. The tendon of the external oblique, the fibres of the internal oblique and transversalis, each, in distinct layers, were divided, and a hernial tumour, the size of a large walnut, was exposed in the upper part of the in-

[1] Previously to this, cases of the accident had been noticed by Sir C. Bell, Messrs. Green and Callaway, and Mr. Brandby Cooper; but Mr. Luke was the first British surgeon who deduced the line of practice to be adopted.

guinal canal. A portion of small intestine, of a dark colour, but reserving its natural lustre, and a small quantity of dirty fluid, were found in the protruded sac. This portion of the sac was but a small part of the whole; the remainder was situated within the abdomen, so that it required the full length of the index finger (a middle sized one), to reach the seat of stricture—the neck of the sac. It was necessary before dividing the stricture, to obtain more freedom by incising the lower edge of the abdominal muscles in a direction across their fibres, and, in order to prevent the neck of the sac receding from the finger, to have it held by the divided edge. The nail of the forefinger was then, with difficulty, insinuated between the intestine and the stricture, and the latter was divided. Although the finger freely entered the abdomen through the neck of the sac, some obstruction opposed the return of the intestine. A resisting band was felt, situated to the inner side of the neck of the sac, between which and the abdominal parietes, the intestine was pressed, and could be felt passing towards the mesial line beyond the reach of a finger; it was dislodged from this situation, and pushed back into the abdomen. The wound was closed, and a bandage applied. The further details of the progress of the case until the patient's death are briefly these:—

"No immediate relief was afforded by the operation; partial quiet and alleviation of symptoms were obtained by an opiate administered directly after; the vomiting continued and constipation remained. No satisfactory action of the bowels was obtained by the free exhibition of enemata, thrown up with the long elastic tube introduced to its full extent. Symptoms of peritonitis were established (in spite of remedies), twenty-four hours after the operation, and in thirty-six hours, evidences of failing vitality appeared; gangrene of the posterior part of the scrotum was discovered, and in the course of twelve hours it spread over the scrotum, penis, lower part of the abdomen, and upper part of the thighs. The patient died in rather more than forty-eight hours after the operation.

"*Post-mortem* examination thirty-six hours after death.—The gangrenous integument was distended with gas. The layer of adipose tissue was thick; the edges of the wound not adhering. There were evidences of general peritonitis, which were most marked in the right inguinal region, where the convolutions were glued together by recently effused lymph. The portion of intestine that had been strangulated, consisting of nearly a foot of the upper part of the ileum, was dark coloured, almost black, covered with patches of recently effused lymph, puckered up in the position it must have assumed in the sac, and deeply marked by the stricture, having an additional depression, partly encircling it below the indenture. The position and relation of the sac will perhaps be better understood by describing it as forming a double pouch, with a common neck and opening; a smaller pouch, about one-fifth of the whole, partly within the abdomen, and partly protruding through the internal ring, and a second and larger pouch, placed nearly at right angles to the former, and extending from the inner side of the internal ring between the peritoneum and abdominal parietes. The cord of the obliterated hypogastric artery had been separated from its natural position on the inner side of the internal ring by the interposition of the larger pouch. It was this which formed the resisting band felt during the operation, and which had caused the second mark upon the portion of intestine that had been strangulated. The sac was readily drawn out from its double position, and then formed a simple bag. The outer side of the neck of the sac was only slightly separated from its connexion with the abdominal parietes. The substance which had been felt at the exernal ring proved to be a mass of fat, connected by a long pedicle, extending up the inguinal canal to the exterior of the protruded portion of the sac.

"Mr. Luke, in his observations, says, 'that the firmness of the adhesions of the parts in which a hernia is embedded, bears no proportion to the duration of the hernial protrusion.' This remark is of great importance in relation to

the efforts that it is safe to make in reducing a hernia by the taxis, both as regards the degree of force to be used, and the period to which it may extend. The evidence furnished by the present case is not very satisfactory on this point, as I could not obtain from the patient a very clear detail of what had previously occurred. As far as I could ascertain, the force used was not sufficient to cause much pain; the reduction of the swelling was perceived by a gradual diminution in its size, not by any sudden decrease. There was no appearance of injury or bruising of the integuments, in the neighbourhood of the swelling, when he was admitted into the hospital; and the intestine also was free from ecchymosis. On the whole, I am inclined to the opinion, that the reduction was effected *more* by the continual employment of a degree of force—not injurious perhaps in itself—than by any one or more undue violent efforts.

"My first conclusion, with regard to the nature of the present case, was, that a scrotal rupture had been partly reduced,—a portion of intestine remaining in the inguinal canal, constricted, in some manner, at the external ring. This opinion was founded on the evidence of the indefinite swelling,—the form a protrusion assumes when small, and confined to the inguinal canal,—and the pressure at the external ring, of what I thought was a hernial sac. The ready yielding of the tumour, and its re-appearance, raised a difficulty to such a diagnosis, and a suspicion of the real nature of the case was then entertained; but the supposed sac at the external ring was an obstacle to such a view of the matter. The clear indication, under existing circumstances, was, to cut down on the swelling in the canal, and explore the mystery. The formation of fat about the sacs of old hernias is mentioned by some authors on hernia.

"I have, since this case occurred, noticed a similar mass of fat appended to an old scrotal hernia, that became the subject of a post-mortem examination. It was uniformly attached to the sac, though easily separable; and might have been left behind, in the reduction of the sac, in the manner that I conjecture the mass in the present instance to have been. More recently, in operating upon a strangulated inguinal rupture which had existed many years,—and been operated on before,—after I had divided a very thick layer of fascia, a mass was exposed, resembling, at first sight, omentum covered with a thin sac; it proved to be a layer of fat about one-third of an inch thick, connected with the sac which was situated beneath it.

"Mr. Luke, in speaking of the facts connected with reduction in mass, and the conclusions to be drawn from them, remarks, 'that the presence of a sac, even without hernial contents, causes an abdominal fulness in the part, easily ascertained by examination. The absence of such fulness in a part where hernia is known to have previously descended, necessarily leads to the conclusion, that the sac, upon which it depended, has been displaced, and probably returned together with the hernia. The sac, in inguinal hernia, below the external ring, becomes united with the spermatic cord, whereby the latter is usually rendered indistinct and obscure. The absence of that indistinctness and obscurity implies the removal of the cause which previously produced them; and, therefore, that the sac has been displaced. The *continuance* of the indistinctness, or obscurity, leads to a directly *contrary conclusion*.'

"The present case shows, that the conclusion to be drawn with regard to the presence of the sac, from the existence of a substance feeling like omentum, in the situation recently occupied by a hernial protrusion, suspected to have been reduced in mass, should be received with some reservation.

"Unconfirmed by other evidence, it cannot be viewed as a certain proof. In addition to this, the existence of depositions of fat in the cord, often placed at the external ring, cysts of the cord, and varicocele, would cause a fulness and obscurity about it, which could not be distinguished from that occasioned by the sac, with or without some portion of its contents. The

only effect, perhaps, of this uncertainty on practice, in such cases, would be, to afford additional reason for an exploratory operation. The direction which the returned bowel, with its investing sac, took (to the inner side of the internal ring), is not that which appears generally to have been observed in inguinal hernia,—viz., below the level of the internal ring, towards the cavity of the pelvis, or else towards the outer side of the ring. The incomplete reduction of the hernia is in accordance with the results of the experiments made by JULES CLOQUET on the dead subject,—that 'in external inguinal hernia, the reduction is generally incomplete, and the swelling reappears as soon as the efforts at reduction are discontinued.' I cannot help thinking that, in this instance, the obliterated hypogastric cord had some share in causing the small portion of the rupture to reappear when apparently reduced, and preventing the complete reduction of the whole. By the approximation of the internal ring, from the long continuance of the rupture, towards the obliterated artery, and by the interposition of the sac and intestine between the parietes of the abdomen and the peritoneum, (the neck of the sac retaining its connexions externally), the inner edge of the neck and the obliterated artery would be forced in a direction backwards, and somewhat outward, so as to bring the latter more nearly opposite the internal ring. Its resistance, added to that afforded by the connexion of the peritoneum with the walls of the abdomen, would then form an obstacle to the complete reduction. Be that as it may, the cord of the vessel exercised considerable pressure,—much more than might, *à priori*, have been anticipated. The difficulty in returning the intestine after the neck of the sac had been divided, and the mark discovered about the portion of bowel that must have occupied the large pouch, sufficiently show this. The manner in which the reduced portion of rupture was girt between the hypogastric cord and the abdominal parietes, would have prevented the reprotrusion of that part by the efforts of coughing and straining, as have been recommended,—the effect of such attempts being, to cause the cord to press more tightly upon the part it constricted. The depth from the surface, at which the stricture was placed, and the obstacle the hypogastric cord occasioned to the return of the intestine, furnished the only difficulties in the operation. The return of the intestine might have been facilitated by dividing this cord, if it could have been recognized; but then it should be remembered, that it is sometimes pervious, by a narrow canal conveying blood for the supply of superior vesical arteries; and a troublesome, perhaps serious, hæmorrhage might have resulted. The continuance of the symptoms of strangulation, after the operation, was due to the portion of bowel not recovering itself after it was replaced."

OLD HYDROCELE TREATED BY EXCISION; AND SIMPLE HYDROCELE BY IODINE INJECTIONS.

At the Hôpital S. Louis, of Paris, on the 20th September, 1848, M. MALGAIGNE operated in the following case; which we quote from the *Journal de Méd. et de Chir. Pratiques*, for January 1849, p. 18-20.

The patient was a locksmith, aged 22 years. When eight years old, he had observed that the right side of the scrotum was larger than the left. The tumour was of an ovoid form, without irregularities, and of the size of a turkey's egg. It was hard, and felt heavy like a sarcocele, for which, from this cause, it had been mistaken by the surgeons of the Hôtel Dieu. The right spermatic chord was harder than the left. There were no lancinating pains; and excepting above, and posteriorly, pressure caused only slight uneasiness. To remove doubts as to the nature of the case, M. Malgaigne made gently an exploratory puncture with a narrow bistoury, (an instrument which can be more easily guided than a trocar). Some drops of fluid exuded. A trocar was then substituted for the bistoury; and after this had been made—with some difficulty

—to penetrate into the tunica vaginalis, about six ounces and a half (*une palette et demie*), of a brownish serosity were drawn off. Immediately after this, fluctuation, which had formerly been masked by the tension of the swelling, became appreciable; and, at the same time, the hard and thickened tunica vaginalis could be distinguished through the skin, feeling like puckered parchment. As the injection of iodine would have been useless in a case of this kind, M. Malgaigne resolved to excise the cyst. An incision was made on the external aspect of the tumour, by which was made evident the hypertrophy of the integuments, their adhesion to the tunica vaginalis, and the cartilaginous transformation of the latter, which was not less than from three to four millimetres (between 1-6 and 1-8 of an inch) in thickness. The question arose,—ought the incision to be prolonged, and a portion of the tunica vaginalis dissected out? This would have been a laborious proceeding, and one involving the risk of hæmorrhage. The operator therefore seized the tunica vaginalis in the forceps, and, with the aid of his finger and a spatula, dissevered it with great facility, in the whole circumference of the tumour. Excision was then accomplished by means of scissors, in such a way as to avoid causing hernia of the testicle, (which organ, though flattened, was healthy). A pledget of lint was placed in the wound, and the scrotum was supported by a sling-bandage. As a precaution, a truss was applied over the inguinal ring and spermatic chord; this being considered the best method of preventing or moderating bleeding consequent upon an operation of this kind. On the 23rd, suppuration was established. On the 2nd of October, dossils of lint (*mèches*) were introduced into the wound, with the view of hastening contraction of a small abscess situated inferiorly. On the 18th, the wound was reduced to the condition of a fistula. On the 24th, pressure was applied to it by means of bandages: and on the 1st of November, the patient left the hospital cured.

Simple Hydroceles are treated by M. Malgaigne by means of iodine injections, composed of two-thirds of tincture of iodine[1] to one-third of distilled water. He conceives that the success attendant on the use of this injection depends upon attention being paid to certain little details. To secure the production of the necessary amount of adhesive inflammation, he advises that the scrotum be left pendulous in the first instance. When this inflammatory action has accomplished the object for which it has been excited, or when it seems to be running too high, the scrotum must be supported, not by a suspensory bandage, but by means of a cravat, arranged in the form of a sling, with its ends attached before and behind, to an abdominal cincture. Support effected in this way, conjoined with the use of emollient cataplasms, suffice to restrain the inflammation within the desired limits. Resolution may be hastened by methodical pressure on the scrotum, effected by means of adhesive bandages.

OBSTETRICS.

SUCTION-TRACTOR PROPOSED BY DR. J. Y. SIMPSON AS A SUBSTITUTE FOR THE OBSTETRIC FORCEPS.

In our last number (p. 205) allusion was made to a new Obstetric Instrument proposed by Dr. J. Y. Simpson. We find the following very interesting paper, explanatory of this Suction-tractor, in the proceedings of the Edinburgh Obstetric Society, published in the *Edinburgh Monthly Journal* for February 1849. We much fear that this proposed substitute for the forceps may only lead to disappointment. That a power, more than sufficient, can readily be obtained, we doubt not; but we almost dread the infant's scalp being torn off, or a parietal bone dragged out. However, our fears may be

[1] The Tincture of Iodine referred to is, we presume, that of the Parisian Codex.

visionary; and certainly the communication of Professor Simpson is most deserving of attention. Our objection is, perhaps, answered in the extract which Dr. S. gives from Dr. Arnott; but, before approving of the proposal, we must wait to see it fully tested in practice. We quote, with very little abridgment, so as to enable our readers to judge for themselves.

"In such tedious cases as seem to require the use of the short forceps, the idea has perhaps crossed the minds of most accoucheurs, that if they could get hold of the *exposed* portion of the scalp of the child, or of the skin forming the caput succedaneum, and could possibly pull by *this* hold, they might expedite the process of delivery. The spherical form of the infant's head, and the intimate mode in which the scalp is spread over the arch of the cranium, prevent the possibility of taking any such hold by the fingers alone. Dibranchiate cephalopods—as the common cuttle-fish—fix their arms, by suctorial discs, so firmly to different surfaces, that their arms themselves will often tear before the suckers. If we could fix upon the *exposed* portion of the fœtal scalp the suctorial disc of a limpet or cuttle-fish with the usual force with which they adhere to the sea rocks, etc., to which they are attached, we would have, in many cases, a power sufficient to enable us to apply by them the necessary amount of extractive force. Such an arrangement and apparatus may be imitated by art. In one protracted case which Dr. Simpson described, he had lately made use of this power to extract the child. When applied, the head was still high up in the pelvic cavity, and the instrument easily afforded such a hold of the head, as to allow it to be slowly dragged forwards and extracted. During this extraction, the instrument required to be re-applied once or twice. The instrument used in this case was very imperfect. It consisted of a common metallic vaginal speculum, fitted with a piston, and with the edge of the trumpet-shaped concave disc at its outer or broader end covered with leather. This broader or leathered end was coated with lard, and applied to the head of the child, and then an exhausting effect produced by moving the piston forwards. The apparatus would admit of much improvement and simplification, as by the mouth of it being made expansible, and capable of altering in shape, instead of metallic and fixed; by the inner edge of it being coated, as in atmospheric railways, by a thin layer or cushion of air enclosed in caoutchouc; by the exhausting apparatus being valved and more perfect, etc. etc.[1] If the Suction-tractor should answer in some long forceps cases, and enable us to drag with sufficient force upon the exposed portion of the scalp, it would save the danger dreaded by many, of wounding the uterus by introducing and working the blades of so long an instrument as the long forceps, high up in the neck and cavity of the uterus itself. Presentations of the breech sometimes require instrumental assistance. The hook passed over the flexure of the thigh is dangerous, and very apt to injure. The forceps are often inapplicable and inefficient. Perhaps the Suction-tractor may afford us a new and sufficient instrumental force for the management of some of these cases. Its use would be simpler and safer than any of the other methods proposed. Dr. Simpson was not aware that any one had applied practically this obstetric means, before it was employed in the case detailed to the Society. But the idea of using such a power had been long ago proposed by Dr. Arnott of London. Dr. Arnott (*Physics*, p. 636) alludes to the subject in the following words: 'The forceps', says he, 'to be well and safely used, requires address, which even the natur-

[1] Since the above was published (as we see by a note appended to a reprint of his paper), Dr. S. has made a great variety of experiments, with a view of ascertaining the best form of disc or mouth piece and exhauster. He finds that a syringe and piston, valved like the common breast-pump, so as to make a pretty perfect vacuum, and having a disc attached to it formed of a double cup, the outer cup of caoutchouc, and overlapping considerably the edges of an inner and smaller cup of metal or gutta-percha, makes an Air-Tractor possessed apparently of the necessary applicability, and requisite adhesive and extractive power.

ally dexterous man cannot possess, without a certain degree of continued practical familiarity with it: and, except in large towns, a man must be unfortunate in his practice who often requires it: hence the really small number of persons who use it well. A tractor of three inches in diameter would act upon any body, to lift or draw it, with a force of about a hundred pounds—with more, therefore, than is ever required or allowable in obstetric practice. In lifting a stone, the tractor does not act as if it were glued or nailed to the stone, but merely bears or takes off the atmospheric pressure from one part, and allows the pressure on the opposite side, not then counterbalanced, to push the stone in the direction of the tractor; so when placed upon the child's head, it would not pull by the skin, in the manner of a very strong adhesive plaster applied there, as uninformed persons would be apt to supposed; but by taking off a certain atmospheric pressure from the part of the head on which it rested, it would allow the pressure on the other side or behind to urge the head forward on its way. Of course the pressure in such a case would not operate on the head directly, but through the intervening parietes and contents of the abdomen. It would be preferable to have a gentle and diffused action of the tractor over a large space, rather than an intense action on a small space, and therefore a tractor for the purpose now contemplated should not be very small, and should have a little air underneath it in a slight depression or cavity at its centre. The forceps must be more effective than the tractor for rectifying malposition of the head, and diminishing its transverse diameter; but the tractor will answer both these purposes in a greater degree than might at first be expected.' (p. 636.) Paré, Paaw, Hildanus, Scultetus, etc., have described and figured suckers, or tractors, as applied to the head with the object of removing depression of the cranium in children."

DR. HUGHES BENNETT'S CASE OF SPONTANEOUS CURE OF OVARIAN DROPSY.

The following is the case alluded to at page 214 of our last number. Upon consideration, we are disposed fully to concur in the correctness of the diagnosis. Perhaps no other case is recorded, in which a fistulous communication has been established between the ovarian sac and the urinary passages.

"Anne Pyper, aged 25, was admitted into the Royal Infirmary, Nov. 8, 1848. She had been delivered fourteen days previously of a male child, in the Maternity Hospital; the labour presented nothing unusual. After the birth, the abdomen continued enlarged, and at first led to the suspicion that another fœtus remained in the uterus. After a time, the true nature of the case was rendered manifest, and a large swelling was detected, which was movable to a certain extent, and presented all the characters of an encysted tumour of the left ovary.

"When I first examined her, I found the abdomen swollen to about that of the sixth or seventh month of pregnancy. The tumour extended from the epigastrium to the pubis, but bulged considerably towards the left side. Its surface was irregular; and two large nodules, each the size of a cocoa-nut, existed about its centre. It was tense and firm to the feel, somewhat elastic, and without fluctuation. The tumour was firmly fixed, and the seat of constant pain,—especially in the left lumbar region,—which was increased by pressure, by lying on the right side, or on assuming the erect posture. The urine was of a slight yellow colour, and normal: the digestive, respiratory, circulatory, nervous, and integumentary organs appeared to be healthy. She had observed the tumour seven months before her delivery; and it has gone on gradually increasing, and been somewhat painful, from the first. *Eight leeches were ordered to the most painful part of the abdomen.* The local pain was relieved by the leeches. On Nov. 12, my attention was directed to the urine, which presented a copious white deposit, occupying two-fifths of the

jar, while the supernatant portion was of a light amber colour, and unusually viscid. The deposit was determined, by the microscope, to consist of pus, mingled with a few compound granular corpuscles. The clear portion was strongly coagulable by heat and nitric acid. At first I imagined that the cyst had burst into the vagina; but the patient and nurse assured me that there was no discharge between the intervals of micturition, and that all the fluid came from the bladder. The urine presented the same characters during the next three days,—the amount discharged, during the twenty-four hours, being about three pints. On the 15th, the tumour had somewhat diminished in size, its hardness and tensity had disappeared, and distinct fluctuation was perceptible in it. *A broad flannel roller was ordered to be applied firmly round the abdomen, and compression made by means of pasteboard, previously soaked and modelled to the abdominal surface.*

"From this time, the abdomen rapidly diminished in volume, while the amount of purulent viscous fluid discharged from the bladder, varied from three to five pints in the twenty-four hours. The appetite and general health continued good; and she was ordered nutritious diet, with four ounces of wine daily. On the 23rd, the amount of pus contained in the urine was greatly lessened, and the clear portion presented only a slight haziness on the addition of nitric acid. On the 27th, the abdomen had regained its natural size, although a dense mass—evidently the collapsed ovarian sac—could readily be distinguished, occupying the left iliac and hypochondriac regions. The urine now was natural in quantity, and presented only a slight sediment, consisting of oxalate of lime, and a few pus globules.

"From this period, she may be said to have recovered. She suffered occasionally from uneasy feelings on the left side, sometimes amounting to pain, which were relieved by the application of four leeches, followed by a small blister. She was dismissed on the 18th of December, expressing herself as being well in every respect. The indurated mass in the left iliac region was greatly diminished in size, but still very perceptible to the feel, though not to the eye."—[Abridged from *Edinburgh Monthly Journal*, February 1849, p. 509-10.]

MATERIA MEDICA AND PHARMACY.

THE MECHANICAL LEECH OF MM. ALEXANDRE AND CO. OF PARIS.

This apparatus consists essentially of two parts—an instrument for puncturing the skin, and another for promoting the flow of blood by removing atmospheric pressure from the punctured part. The puncture is effected by a lancet, the blade of which has the form of the cutting apparatus of the leech. This lancet is fixed in the mouth of a tube, and projects about the eighth of an inch beyond the edge of the tube. It may be elevated by a small lever, so that its point shall be within the tube, in which position it is secured by a catch. Attached to the opposite end of the tube, by a piece of vulcanized India-rubber, which acts as a spring, is a piston, which is pressed down by a rod, and, on removing the pressure, is drawn back by the India-rubber spring. The piston being pressed down, the open end of the tube in which the lancet is fixed, is placed over the part to be punctured: the pressure is now removed, when the piston is drawn back by the spring, and exhausting the air within the tube, the skin is forced up into the mouth of the tube. On loosening the lever, by which the lancet has been elevated, the latter is drawn down by a spring, also of vulcanized India-rubber, so as to effect the puncture. The cutting instrument is now removed, and a glass tube with a piston, similar to that already described, is placed over the puncture, the air within being exhausted so that the tube adheres to the part, and the blood flows freely into it. Half-a dozen or a dozen tubes, each of

which would draw as much blood as a large leech, might be thus attached in two or three minutes. The apparatus, consisting of a cutting instrument and six or twelve suction tubes, together with sundry implements for cleaning the lancet and tubes after use, are contained in a small case. It is very neatly got up, and, we understand from those who have used it, is very efficient. The idea, however, is not new; so long ago as the year 1813, the silver medal was awarded at the Society of Arts to Mr. J. Whitford, of St. Bartholomew's Hospital, for the invention of a somewhat similar apparatus for the same purpose. In Mr. Whitford's apparatus the exhaustion was effected by a syringe, which was found to be inconvenient. The use of vulcanized India-rubber springs, attached to the pistons, by which efficient suction-tubes are economically formed, is a great improvement in MM. Alexandre's apparatus.—*Pharm. Journal* for Feb. 1849, p. 369.

THE CINCHONA HARVEST.

In his *Travels in Peru*, Dr. Von Tschudi says, that the Indians assemble in May for the purpose of gathering Cinchona. The forests in which the tree is found are so dense, that the Indians are obliged to mount one of the highest of them, in order to cast a general *coup-d'œil* over the forest, and to distinguish the *manchas*, or places where the Cinchona trees are grouped together. The men who climb the trees are called *cateadores*, or seekers; and a great deal of experience is necessary, to be able to recognize, at a single glance, in the midst of a very dense foliage, the Cinchona trees, by the peculiar tint of their leaves, which does not differ remarkably from that of the surrounding trees. As soon as the *cateador* has found the object of his search, he descends to rejoin his companions, and conducts them with wonderful precision, and through the midst of a very dense thicket, towards the group of trees which he has discovered. A hut is forthwith constructed, for the purpose of repose at night, and also to dry the bark. The tree is cut down as near the ground as possible, divided into pieces of three or four feet in length, and, by means of a curved instrument, longitudinal incisions are made in the bark. In a few days the bark, if dry, is made up into parcels; but in many districts, it has to be carried while green to the neighbouring villages, and there dried by exposure to the sun.

Towards the end of September, the *cascarilleros* (from *cascarilla*, the name which the Indians give to Cinchona) return home, and in the following spring resume their usual labour. At the time of the first discovery of South America, Cinchona formed one of the chief articles of commerce in Peru; but since the commencement of the present century, the importance of that commerce has greatly decreased, either from the transmission to Europe of an inferior quality of bark, or from the discovery of quinine having diminished the quantity of Cinchona employed since that period. During the war of independence, the Cinchona trade received a fatal blow: and but small quantities of the bark have been exported from Peru for several years.

In the present day the trade is beginning to revive, especially as the trees, which had been cut down, have sent up vigorous shoots, particularly in the Huanaco Mountains. A species of Cinchona is found in the Huamalies Mountains, on the nature of which botanists are not agreed, and in which a peculiar alcaloid, *cusconin* or *aricin*, has been discovered by two French chemists, Corriol and Pelletier. During the stay of Tschudi in Peru, it was in contemplation to establish a manufactory of quinine at Huanaco. There is already one in Bolivia, conducted by a Frenchman; but the quinine which proceeds from it is very impure. The Peruvians employ the green bark of Cinchona in intermittent fevers; and Tschudi has been able to assure us, from personal experience, that it possesses more activity in this form, than in the dry state.—[From *L'Union Médicale*, 10th Nov. 1848.]

CHEMICAL NATURE OF COD-LIVER OIL.

Dr. Jonathan Pereira has communicated to the *Pharmaceutical Journal* for February 1849, pp. 370-78, the important researches of De Jongh, accompanied by important remarks of his own. The following is an abridgment of the paper, which, our readers will observe (among other interesting facts), points out that sulphuric acid is a test, by which the oil obtained from the livers of fish can be distinguished from the oil got from other parts of the animal.

The oils obtained from the livers of the tribe *Gadidæ* are very similar in their physical, and chemical, and probably also in their medicinal, properties. To all of them, the term *Oleum Jecoris Aselli*, *Oleum Jecoris Gadi*, or *Cod-liver Oil*, is indiscriminately applied; though it is commonly used to indicate the oil of the liver of the common cod (*gadus morrhua*, Cuv.). It would be better, therefore, to employ the term *Oleum Jecoris Morrhuæ*, when it is intended to designate the latter oil.

De Jongh, in his *Disquisitio Comparativa Chemico-Medica de Tribus Olei Jecoris Aselli Speciebus*, published at Leyden in 1843, states, that the Bergen (Norwegian) oil is principally obtained from three species: viz. the dorse (*gadus callarias*), the coal-fish (*gadus carbonarius*), and the pollack (*gadus pollachius*); but chiefly from the first.

De Jongh made a very elaborate analysis of three kinds of Cod-liver Oil:—

1. *Pale Cod-liver Oil.*—Golden yellow; odour not disagreeable; not bitter, but leaving in the throat a somewhat acrid fishy taste; reacts feebly as an acid; sp. gr. 0·923 at 63° ·5 Fahr. Cold alcohol dissolves from 2·5 to 2·7 per cent. of the oil; hot alcohol from 3·5 to 4·5 per cent.; in ether it is soluble in all proportions.

2. *Pale brown Cod-liver Oil.*—Colour, that of Malaga wine; odour not disagreeable; bitterish, leaving a slightly acrid fishy taste in the throat; reacts feebly as an acid; sp. gr. 0·924 at 63° ·5 Fahr. Cold alcohol dissolves from 2·8 to 3·2 per cent. of oil; hot alcohol, from 6·5 to 6·8 per cent. Ether dissolves it in all proportions.

3. *Dark brown Cod-liver Oil.*—Dark brown, is transmitted light greenish, in thin layers transparent; odour, disagreeable, empyreumatic; taste, bitter and empyreumatic, leaving behind, in the fauces, an acrid sensation; reacts feebly as an acid; sp. gr. 0·929 at 63° ·5 Fahr. Cold alcohol dissolves from 5·9 to 6·9 per cent. of it; hot alcohol, from 6·5 to 6·9 per cent. In ether it is soluble in all proportions.

De Jongh found the constituents of these oils to be *oleate* and *margarate of glycerine*, possessing the usual properties. But they also contained *butyric* and *acetic acids*, *the principal constituents of the bile* (bilifellinic acid, bilifulvin, and cholic acid), *some peculiar principles* (among which was the substance called *gaduin*), and not quite one per cent. of *salts*, containing iodine, chlorine, and traces of bromine. Moreover, he found that the oils contained free *phosphorus*.[1]

The *pale* oil is richest in oleic acid and glycerine; the *brown* oil contains the largest amount of margaric, butyric, and acetic acids, and of the substances peculiar to Cod-liver oil; and the *pale brown* oil is richest in iodine and saline matters.

1. *Gaduin* (discovered by De Jongh) is thus obtained: Saponify Cod-liver Oil by means of caustic soda, and decompose the soap thus obtained by acetate of lead. The resulting lead-soap treat with ether, which takes up oleate of lead and gaduin, and leaves undissolved the margarate of lead. The ethereal solution is dark brown. If it be decomposed by sulphuric acid, brown

[1] For the precise results of the analyses, we must refer to the Pharmaceutical Journal.

oleic acid is set free. The brown colour of this acid is owing to the presence of gaduin. To separate the latter, add excess of caustic soda to the oleic acid, by which oleate of soda is formed. This is insoluble in the excess of caustic soda. It is to be dissolved in alcohol, and the alcoholic solution cooled below 32° Fahr., by which the oleate of soda separates, leaving, for the most part, the gaduin in solution. By sulphuric acid, the gaduin is precipitated from its solution.

Gaduin is first yellow, but on exposure to air, brown; it is odourless, tasteless, soluble in alcohol, but rendered insoluble by evaporating its solution to dryness. The alcoholic solution yields, on the addition of neutral acetate of lead, a copious precipitate, composed of $C_{35}\ H_{32}\ O,\ PbO$. If this lead salt be digested with carbonate of soda, it is decomposed, and a soda salt is obtained in solution, from which sulphuric acid precipitates a brown acid. Gaduin is insoluble in water, in nitric, and in hydrochloric acids. In sulphuric acid it dissolves, and acquires a blood-red colour; but from this solution it is precipitated both by water and alkalies. It is soluble in alkalies. Diffused through water, and treated with chlorine, it becomes decolourized. In burning, it yields an odour first of acetic acid, afterwards of cod-oil, and leaves behind a small quantity of ash. Berzelius thinks that Gaduin is primitive bilifulvic acid; and that the reddish-brown substance, insoluble both in alcohol and water, which he (Berzelius) separated from bilifulvin by long and numerous operations, is only the insoluble modification of Gaduin. Gaduin is contained in the three varieties of oil examined by De Jongh.

2. *Fatty acids,—margaric and oleic acids,*—do not appear to differ in their nature and composition from the same acids procured from other sources.

3. *Glycerine.*—This was obtained by saponifying Cod-liver Oil by caustic soda.

4. *Bile Constituents.*—When Cod-liver Oil is shaken with water, an emulsion is obtained, from which the oil slowly separates. The aqueous liquid becomes clear by filtration. That which had been obtained by shaking the brown oil with water, was coloured and empyreumatic; but the other kinds of oil did not colour the water. The liquid invariably had a slightly acid reaction, and the oil which had been shaken with it was clearer, had a feebler odour, and reacted less powerfully as an acid. By boiling the oils with water, the same results were obtained. By evaporation, the aqueous fluids from all the three kinds of oil yielded a reddish-brown extract, which, softened by heat, was slightly soluble in water, more soluble in ether, and completely so in alcohol. Alkaline solutions dissolved it, and acids threw it down again in the form of a reddish brown flocculent precipitate. The extracts had a peculiar odour, and a bitterish taste. The quantities obtained from the different kinds of oil were as follow:

	With cold water.	With hot water.
Pale oil ...	0·607 per cent. ...	0·513 per cent.
Clear brown oil	0·890 — ...	0·849 —
Brown oil ...	1·288 — ...	1·256 —

When successively treated with ether, alcohol, and dilute spirit, all these extracts yielded the same results.

By ether, a reddish-brown, transparent, glutinous extract was obtained, which melted by heat, stained paper, and had the odour and taste of bile. After some time, small crystals made their appearance in it. It was slightly soluble in water, but readily so in ether and alcohol. A solution of carbonate of ammonia, added to its ethereal solution, caused separation into two layers. The upper turbid layer, by evaporation, yielded some drops of *olein*, some crystals of *margarin*, and a *brownish mass*, which was identical with that procured by the evaporation of the lower layer. This brown mass had a bitter taste, was separated by water into a soluble and insoluble portion, and consisted of *fellinate* and *cholate of ammonia*.

The extract, which had been exhausted by ether, yielded to alcohol a

blackish-brown, odourless, bitter, shining, hygroscopic mass, which dissolved with difficulty in water, and consisted of *biliverdin*, *bilifulvin*, and *bilifellinic acid*.

Dilute spirit removed from the residual extract a black shining substance, soluble in alkalies, concentrated sulphuric acid, and hot acetic acid, but insoluble in nitric and hydrochloric acids. From its alcoholic solution, baryta-water and acetate of lead precipitated it of a brown colour. It left no residue by burning.

The residue of the aqueous extract, left after the action of the three above-mentioned solvents, contained an *organic substance* (whose nature has not been determined) and *inorganic salts*, in which chlorine, phosphoric and sulphuric acids, lime, magnesia, and soda were found, but no potash or iodine.

5. Iodine, bromine, and chlorine.—Their therapeutical agency in the oil must, if any, be exceedingly small. The proportions in which they exist are inconstant, though very trifling. Beneficial effects have been produced by the use of the oil, which neither iodine nor bromine are capable of producing. De Jongh says, that iodine is present in genuine Cod-liver Oil, but that the only certain mode of detecting it is to saponify the oil, and carbonize the resulting soap. He confirms STEIN's remark, that neither by immediately carbonizing the oil, nor by saponifying it, and then decomposing the soap by acids, can the iodine be detected. It follows, therefore, that iodine exists in the oil neither in the free state nor in that of metallic iodide, but probably in organic combination—perhaps, as an iodic fatty acid. De Jongh determined the proportion of iodine by forming iodide of palladium; every 100 parts of anhydrous iodide of palladium was considered equivalent to 70.34 parts of free iodine.

The largest amount of iodine found in genuine oil is less than 0.05 per cent. If the amount obtained be larger than this, fraud may be suspected. Dr. MARTINI[1] says, that dishonest druggists have introduced iodine into the oil, to augment its commercial value; and it is stated that artificial Cod-liver Oil has been made by combining iodine with common train oils.

De Jongh detected *bromine* and *chlorine*, in minute quanties, in the oil.

6. Phosphoric and Sulphuric acids, and Phosphorus, were found by De Jongh.

7. Acetic and Butyric acids.—De Jongh separated these volatile acids from Cod-liver Oil by adding sulphuric acid to the soda-soap, and distilling the liquor thus obtained.

The GENUINENESS and PURITY are known partly by physical, and partly by chemical tests.

The PHYSICAL CHARACTERS are colour, odour, and flavour. The finest oil is most devoid of colour, odour, and flavour. The oil in the cells of the fresh liver is nearly colourless, and the brownish colour possessed by the ordinary Cod-oil used by curriers is due to colouring matters derived from the decomposing hepatic tissues and fluids, or from the action of air on the oil. Chemical analysis lends no support to the opinion, at one time entertained, that the brown oil was superior, as a therapeutical agent, to the pale oil. If patients could conquer their aversion to the brown oil, its free use, like that of other rancid and empyreumatic fats, would often disturb the digestive functions, and be attended with injurious effects.

Of the CHEMICAL CHARACTERS which have been used to determine the genuineness of Cod-liver Oil, some have reference to the iodine, others to the gaduin, or to the bile constituents. Iodine, or iodide of potassium, added to train oil, to imitate Cod-liver Oil, may be readily detected by adding a solution of starch and a few drops of sulphuric acid, by which the blue iodide of starch is produced; or the suspected oil may be shaken with alcohol, which abstracts the iodine. But though we may thus readily prove that the sus-

[1] Naturgeschichte der für die Heilkunde wichtigen Thiere. Darmstadt: 1847.

pected oil contains no artificially added iodine, the iodine which is naturally contained in, and more intimately combined with the oil, may be frequently recognized by another process. MARCHAND[1] gives the following directions for detecting it: Saponify the oil with soda, carbonize the soap thus obtained, digest the coal in distilled water, add a drop of starch paste, and subject the mixture to the action of a voltaic battery, the positive pole being placed in contact with the starch paste, the negative pole with the solution. If iodine be present, the starch becomes blue. Marchand states that by this test, the iodine can be detected in the urine of a patient soon after he has taken the oil. This, however, is certainly not always correct; for I submitted the urine of a young gentleman, who, for several weeks, had taken with great benefit a table-spoonful of Cod-liver Oil thrice daily, to the action of a galvanic battery of fifty pairs of plates for several hours, without obtaining the slightest evidence of the presence of iodine.

Sulphuric acid has been employed as a test for Cod-liver Oil. If a drop of concentrated sulphuric acid be added to fresh Cod-liver Oil, the latter assumes a fine violet colour, which soon passes into yellowish or brownish-red. Some samples produce at once the red colour, without the preliminary violet tint. It has been erroneously supposed by some persons, that this violet colour was due to the evolution of iodine, by the action of the acid on an alkaline iodide contained in the oil. If that were the case, the presence of a little starch-paste would be sufficient to convert the violet into an intense blue colour; which is not the case. The colouration in fact depends on the action of the sulphuric acid on some one or more organic constituents of the oil, and the following facts lead me to infer that it is in part due to the presence in the oil of one of the constituents of the bile. In 1844, PETTENKOFER[2] pointed out a new test for bile. If to a liquid supposed to contain bile, about two-thirds of its volume of oil of vitriol be added, the liquid kept cool, a few drops of a solution of cane-sugar (four or five parts of water to one of sugar) be added, and the mixture shaken up, a violet red colour is produced, provided bile be present. This test succeeds very well, if we dissolve a little extract of ox-bile in water, and test the solution with sugar and oil of vitriol. The colour developed agrees with that produced by the addition of oil of vitriol to Cod-liver Oil, which De Jongh has shown, contains the essential constituents of the bile. Pettenkofer remarks, that the presence of a very great excess of chlorides will change the violet-red colour into a brownish-red. This fact is deserving of notice, because it may aid in accounting for the fact that some specimens of Cod-liver Oil strike a brownish-red, not a violet-red colour, with oil of vitriol.

STRECKER[3] confirms PLATNER's observation that both cholic and parsebolic acids produce the same colour with sugar and oil of vitriol, as bile does; so that Pettenkofer's test doubtless acts on one or both of these acids. Now De Jongh has shown that cholic acid is contained in Cod-liver Oil, and we have, therefore, good reason for believing that it is in part by the action of oil of vitriol on this acid, that the violet-red colour is produced. For the development of this colour in bile it is necessary to use, besides oil of vitriol, a third agent (sugar). For cane-sugar we may substitute grape-sugar, starch, or any substance which can by the action of oil of vitriol be converted into grape-sugar. No such substance has hitherto been detected in Cod-liver Oil, and, therefore, it may be said the necessary ingredient to produce this characteristic re-action of oil of vitriol on cholic acid is wanting. Strecker has recently supplied the wanting link. In his valuable paper on ox-bile, he observes that acetic acid may be substituted for sugar. To the liquid supposed to

[1] Lehrbuch der Physiolog. Chemie.

[2] Ann. der Chemie und Pharmacie, Bd. lii, s. 90, 1844; also Simon's Chemistry, translated by Dr. Day, vol. ii, p. 193.

[3] Ann. der Chemie und Pharmacie, Bd. lxv, s. 13, 1848.

contain bile, add a few drops of acetic acid, and then concentrated sulphuric acid, when a magnificent purple-red colour is developed. If the quantity of bile be small, it may be necessary to use heat. Now, as Cod-liver Oil contains acetic acid, we have the requisite agent to enable the oil of vitriol to act on the cholic acid, and the development of the purple or violet-red colour is then readily accounted for. I have already noticed the red colour produced by the action of oil of vitriol on gaduin (supposed by BERZELIUS to be derived from the bile). Here, then, is another source for the red colour caused by the action of sulphuric acid on Cod-liver Oil.

Sulphuric acid, then, is a test for liver oils. It does not distinguish one liver oil from another: neither does it distinguish good Cod-liver Oil from bad, for it produces its characteristic re-action both with common brown Cod-oil, and with the finest and palest qualities. But it serves to distinguish oil procured from the liver, from oil obtained from other parts of the animal.

TOXICOLOGY.

ONE PROCESS FOR DETECTING ALL METALS IN ORGANIC MATTERS.

In the *Annales d' Hygiène Publique*, for January 1849, we find a paper, by M. H. GAULTIER DE CLAUBRY, on a "Process by which all Metals can be obtained by a single operation, in chemico-legal researches." His objects are,—1, to obtain in all cases a solution of the metal; 2, to collect the metal from the solution; and 3, to present it in solution, in as concentrated a form as possible, to the action of chemical reagents. He says:—

With this intention (that of obtaining a perfect solution of the metallic substances), hydrochloric acid or chlorine have been employed, with more or less advantage. Without stopping to discuss the advantages or inconveniences arising from their employment, we may say, that the alteration desired to be effected by them is always more or less difficult, and that a great proportion of the organic matter resists their action. We know, from numerous facts, how much more readily a body enters into a new combination when in a nascent state, than when in the form under which we see it; and it is precisely in this state that chlorine may be made available for the object which occupies our attention. . . . If we introduce any organic matter into fuming hydrochloric acid, and, after having removed the fatty matters, which are altered with difficulty, gradually add concentrated nitric acid to the fluid, either cold or slightly warmed, a complete solution is obtained of every thing, with the exception of fatty matters. The solution is almost colourless, transparent, and can be afterwards tested with the greatest facility.

The stomach, intestines, liver, products of vomiting, excrements, blood, urine, wine, milk, earth from burying-grounds, etc., etc., can all be treated after this method, which requires no particular care, so that the operation is performed as easily as the solution of a metal in an acid. Where the poisonous agent is arsenic, if the operation be conducted slowly, the metal does not pass off by evaporation; however, as a portion of chloride of arsenic may be volatilized, and as the chlorine and acid require some means to prevent them from passing off, and incommoding the operator by filling the laboratory with their vapours, it is always best to use a retort furnished with a tubular receiver. When the operation is finished, the condensed liquor is to be treated in the manner to be presently described. A tubular retort, into which are introduced in succession, first the hydrochloric acid, then the suspected materials, and finally the nitric acid, is thus sufficient for the operation. If it be known that arsenic do not exist, and there be no necessity for guarding against the escape of acid vapours and of chlorine, the operation may be performed in a matrass. By this process, the difficulties are prevented, which arise from the employment of sulphuric acid for the destruction of the organic materials, and a perfectly liquid product is obtained.

When the materials are much disorganized, the nitric acid is to be introduced gradually, and gentle heat is to be applied. When, after successive additions of the acid, the organic matters have disappeared, leaving only fatty matters, the liquor is to be decanted, and washed several times in distilled water. This is to be poured off, and mixed with the acid solution. After this, the detection of the metals becomes extremely easy, and may be effected in various ways.

If it be desired to use hydro-sulphuric acid, the nitric acid must be driven off, by boiling the liquor with an excess of hydro-chloric acid, until chlorine ceases to escape: after this, the liquor will only have to be tested for zinc, which may be present accidentally, or for those metals which are not precipitable by hydro-sulphuric acid. If Marsh's test is to be employed, the liquor must be saturated with pure potash; and, after decomposition has taken place, sulphuric acid must be added, till the last traces of nitric acid are removed. The operation may then proceed in the ordinary manner.

I have employed another process, which seems to offer important advantages, and is easy to be performed; it depends on the precipitation, by a galvanic current, of the metals in solution. After having concentrated the liquors, as far as experience may determine to be necessary for driving off an excess of acid, there are to be placed in the solution two plates of platinum, or a single plate of that metal, forming the catilode of a permanent battery; and another of zinc (if that metal be not sought for), of tin, or platinum, forming the anode. After an interval of greater or less duration, according to circumstances, but never exceeding, in the most unfavourable conditions, eight or ten hours, the platinum is covered by a deposit of the metal, or metals, which were in solution. This deposit is to be washed, and treated with hot or cold nitric acid; a solution of the metal or metals is thus obtained, which, from the small quantity of liquid, can be operated on with the greatest facility. In this way, almost infinitesimal quantities of the various metals may be detected; and it is obvious that the same proceeding is applicable to all, with the exception of silver, which is rarely to be tested for in cases of poisoning, and zinc, which necessitates the employment of tin or platinum, as the anode of the pile.

Although sparingly soluble, chloride of lead dissolves in an excess of hydro-chloric acid easily enough for all the lead to be detected in the liquor.

If the presence of arsenic be suspected in the matters to be examined, the liquids procured by the treatment with nitric acid, must be saturated with potash; and, after the solution has been conveniently concentrated, must be remixed with the solution of the organic products. In no other case have volatile products to be dealt with.

It is not worth while to describe the numerous experiments which I have made on this process, as, in the hands of chemists, it will present no difficulty in its application.

The legal chemist is not only called on to afford light to the investigations of justice, in cases of poisoning, but frequently also to perform experiments, with the view of detecting the presence of substances which are not in sufficient quantity to act at once as poisons, but whose use is to be prevented on account of the accidents to which they may give rise: *e.g.* the presence of copper in bread. It is well known, that bakers have sometimes fraudulently introduced extremely small proportions of sulphate of copper into paste. The combustion of the charcoal from bread is very tedious; but an examination is performed with ease and rapidity by the process which I have described. It permits a large quantity of bread to be operated on, and a repetition of the experiments, with a degree of exactitude, which leaves nothing to be desired.

When, in testing for zinc in bread, or in other organic matters, recourse is had to carbonization, there is always danger of a portion of the metal being volatilized; by treating it with aqua regia, the operation is rendered easy,

and no part of the metal is lost. It is not necessary to mention all the other circumstances to which this new method may be applied. I have met with no case in which I have not been able to employ it; and hence I may consider that its adoption will render great services to chemists, when called on to make researches of the kind under consideration.

It may be objected to this method, as to many others in which hydrochloric acid has been used, that this acid may contain arsenic. There is but one answer to this objection, viz.—that as hydro-chloric acid can be obtained free from arsenic, such must be procured, and alone employed. Sulphuric acid, also, often contains a greater or less quantity of this metal; that only which is free from it, is to be used.

POISONING WITH CHLORIDE OF ZINC: SUGGESTION OF AN ANTIDOTE.

Dr. Thomas Stratton, R.N., relates in the *Edinburgh Medical and Surgical Journal*, for October 1848, two cases of poisoning with Chloride of Zinc. In both cases, a wine-glassful of a solution was swallowed, containing in one case, about twelve grains of the salt, and in the other, about two hundred grains. In the latter case, burning pain in the gullet, burning and griping pain in the stomach, great nausea, and sense of coldness, were instantly felt. Vomiting followed in a few minutes. Dr. Stratton saw this patient twenty minutes after the accident, and instantly made a strong solution of home-made brownish soap, of which he made the patient swallow, at intervals, three or four pints. Afterwards, olive oil was given, and the patient recovered. The other case was not seen by any medical man; but it also terminated favourably. Dr. Stratton suggests either soap, or carbonate of soda or of potash, as antidotes to Chloride of Zinc, and supports his suggestion by the recital of experiments which he has performed.

PSYCHOLOGY.

THE POLITICAL CLUBS OF PARIS, AND THEIR INFLUENCE ON THE CEREBRAL FUNCTIONS.

Under the above title, an editorial article appears in *l'Union Médicale* for 3rd February, 1849, of which the following is the substance.

A Club is not an institution, where an orator collects around him a calm and benevolent audience; nor is it an assemblage of pupils listening attentively to the words of their master, and fearing to allow their passions to be excited, lest they should be prevented from receiving instruction. Any one who has, even for an instant, entered one of these tumultuous assemblies of Paris, called "Clubs," must be convinced of the contrary. In them, applause is only awarded to him who arrives at the highest pitch of warmth, of passion, and of anger. No heed is paid to the calm and simple language of reason: attention and sympathy are granted only to him who can most powerfully excite. Perhaps serious consequences would not arise, if the excessive excitement did not proceed beyond this point; but it is greatly increased by the nature of the matters which are discussed, and by the right, possessed by every one, of speaking in his turn. The subjects of discussion are not the *duties*, but the "*rights*," of the audience. The orator takes care not to mention the duties which his auditor owes to the state; but, on the contrary, he tells him, that the state owes him every thing. Such ideas, carried out to their fullest extent by principles of Socialism, raise a man's pride to its extreme elevation; and lead him, from having a modest sense of his own worth, to exaggerate it far beyond its real bounds. The dullest and meanest intellects are influenced by the universal right of speaking. He who has hitherto been silent on important questions, thinks that his future career is that of a public orator, destined to solve the deep problems of political science; he

has been often told from the tribune, that he can speak as well, and think even better, than statesmen of the highest reputation. While in a state of excitement and passion he hears himself applauded. Henceforth he becomes the orator!

The Clubs thus tend to provoke pride and its consequences; and, if we reflect that the exalted consciousness of *ego*, that an over-powerful self-love, is one of the most active causes of insanity, we shall not be surprised that these schools of agitation are prolific of insanity. Habitual excitement alone will produce insanity; and the more easily when self-esteem is provoked, and pride is brought into a state of activity. Many instances have occurred, where the mere excitement of a theory has caused insanity. This was witnessed, for example, in the flourishing days of Saint-Simonism.

The Clubs, however, have furnished a larger tribute to the lunatic asylums than Saint-Simonism. Many patients, whose insanity is of recent date, have been admitted into these establishments. Some of these persons have become deranged through the troubles of the civil war, by the loss of their position, or the ruin of their fortune. But most owe their insanity to the Clubs. Their weak or infirm intellects have there been excited. This pride-madness is the madness of *personality*,—the worship of *ego* in its extreme form. The frequenter of the Clubs foolishly thinks himself destined to achieve something wonderful. He knows the secret of the imposition of taxes, of the payment of the debt, of the government of the state, of the enrichment of the poor, and degradation of the rich. There is no rank which he cannot debase, no degree of infirmity or want which he cannot relieve. Such men must understand these subjects, for they have become geniuses, under the influence of mental alienation; they are no longer poor mortals,—they are deities!

It is true, that many of these patients are sent to the asylums on the first appearance of the malady; but in these times, where exaggeration is the order of the day, many remain associated among the sane, partaking of all the excitements of the moment, and feeding their insanity. Great is the number of those who arrive at a high state of excitement, without actually becoming insane. Such persons form the ordinary effective force of the clubs, and are the instruments of disorder, under the direction of the evil-disposed. There is a resemblance, in the processes of reasoning carried on by these politicians, to those which are heard in asylums, among the undoubted victims of mental disorder. These institutions of pretended instruction, or foci of liberty and discussion, now open in Paris and throughout France, are places where human pride is developed into aberration of mind, and ultimately into perfect insanity. To tolerate such institutions, is to permit a few isolated affections to take the terrible proportions of an epidemic. The malady would be formidable enough if it only affected human life; but it also strikes at the root of the social system. A prompt remedy must be applied. It has been proposed to close the Clubs; and this is the only practicable method of arresting the mischief. If the National Assembly considered the subject as they ought, in a psychological point of view, they would, without hesitation, adopt this proceeding.

REPORTS OF SOCIETIES AND ACADEMIES.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

FIFTH MEETING OF SESSION, 1848-49.—JANUARY 23.

J. M. ARNOTT, ESQ., F.R.S., PRESIDENT.

CASE OF ANEURISM OF THE AXILLARY ARTERY. BY HENRY HANCOCK, ESQ.—A bargeman, aged thirty-four, who was admitted into the Charing-cross Hospital in August last. The tumour presented all the ordinary characteristics of aneurism, and occupied the entire axilla, raising the pectoral muscles and clavicle. He was bled on admission, and a week afterwards Mr. HANCOCK placed a ligature on the subclavian, external to the scalenus. The case went on favourably for a fortnight, when the tumour showed signs of inflammation. At the end of three weeks the ligature came away; six days after which, the sac, which had suppurated, burst. Another opening was made lower down, which allowed the escape of a large quantity of offensive blood and matter. The wound made at the operation was then nearly healed. From this time he appeared to be going on well for ten days, when suddenly a gush of blood took place from the sac, and he expired in about three-quarters of an hour afterwards. A careful dissection was made of the parts, and the axillary artery was found healthy, except where it communicated with the sac. The divided ends of the artery were each closed by adhesive inflammation, and a plug of coagulum of about half an inch in length. Six branches were found proceeding from the artery between the part on which the ligature was applied and the opening in the side of the artery into the sac. From one or more of the largest of these the fatal hæmorrhage probably took place, the blood being thus brought backwards into the artery above the opening into the sac, and its impulse forcing out the coagulum which was interposed. Mr. H. gave a statistical account of operations for the cure of traumatic and idiopathic axillary aneurism, in confirmation of his impression that the ligature should be placed on the axillary artery itself "in all cases where the mischief can be traced to a direct injury, and where the size of the tumour admits of our reaching this vessel." The risk of hæmorrhage would, he considers, be thus materially diminished, if not altogether obviated, in case of the sac suppurating, as in the present instance.

Mr. B. PHILLIPS said, it must be recollected, that in cases requiring ligature in this neighbourhood, the axilla frequently presented such appearances, that the surgeon would scarcely feel justified in performing any operation below the clavicle; and this would explain, perhaps, the reason why this operation was so little resorted to. It was one, however, that surgeons usually recommended, when practicable; and Mr. Hodgson, if he had not said so much in words, had, by implication, given it his sanction. Desault and Pelletan had also adopted the practice; therefore Mr. Hancock was in error in supposing he was recommending any novel mode of proceeding. The operation on the axilla was the rule, and not the exception, as Mr. Hancock had stated.

Mr. HANCOCK was surprised at the remark of Mr. Phillips respecting the opinions of Mr. Hodgson and other surgeons. He had no recollection of any such statement in the works referred to. The cases enumerated in the paper were:—*First*, Those in which the subclavian was tied for idiopathic axillary aneurism; *Second*, Those in which the subclavian was tied for traumatic axillary aneurism; and *Third*, Those in which the axillary itself was tied for traumatic aneurism of that vessel. Of the first, there were twenty cases—ten recovered, ten died; of the second, eighteen cases—eight recovered, and ten died. Of the last, there were four cases, all of which recovered.

Mr. ERICHSEN had paid some attention to the subject under discussion, and had formed the opposite opinion to that promulgated by Mr. Hancock. He agreed with him in his definition of aneurism; and excluded all cases which did not come under that category. Now in eight cases in which the subclavian had been tied *above* the clavicle, for traumatic axillary aneurism, seven had recovered; and four or five cases, tied *below* the clavicle, had all recovered. It was necessary to distinguish between spontaneous, and circumscribed false aneurism; as in the first, the mortality was greater in an equal number of cases, when the subclavian was tied. In the operation recommended by Mr. H., you run the risk of cutting off the collateral circulation of the arm, the probable consequence of which would be gangrene of the extremity.

Mr. HANCOCK contested the validity of Mr. Erichsen's statistics; and remarked, he (Mr. H.) had drawn his conclusions from a much larger number of cases. With regard to gangrene, Mr. Erichsen had proved how futile was the objection, for his own four cases had all recovered.

ON SCARLATINAL ALBUMINURIA, AND THE SEQUELÆ PROPER TO THAT AFFECTION. WITH ILLUSTRATIVE CASES.—BY JAMES MILLER, M.D.—DR MILLER gave a table, comprising 219 cases of scarlatina observed during the summer of 1848. In fifty-nine cases, the scarlatina was followed by renal anasarca, while in ten cases, the latter affection occurred, unpreceded by any of the ordinary outward signs of scarlatina, the cases of renal anasarca making altogether somewhat more than one-third of the whole. After a brief sketch of the prominent features of the renal anasarca following scarlatina, as it ordinarily occurs, he noticed the importance of œdema of the face as a characteristic symptom. He divided the disease into four species, according to the intensity of the general symptoms, the absence or presence of dropsy, etc., and pointed to the relation observed to subsist between albuminuria and anasarca—namely that the degree or intensity of the one is, as a general rule, in an inverse proportion to that of the other. The question whether renal dropsy succeeding scarlatina should be considered a sequela or not, was then taken up. In accordance with the laws of the operation of the scarlatinal poison in the human economy, the notion of the kidney being involved among its primary actions, although usually second or third in the order of structures affected, was considered, and an attempt made to strengthen the supposition, by a detail of eight cases in which there was direct exposure to the scarlatinal miasm, but which were wholly unpreceded by eruption, throat affection, etc., a rigor alone ushering it in, with slight and short preliminary fever. Such cases the author distinguishes by the name of scarlatina renum; and he includes also under that appellation, the cases in which the kidney exhibits an equally intense morbid action, but in which the skin has previously been affected in a minor degree. He further supported his position by the known epidemic character of the complication, and its occurring in families and groups of children, in accordance with the unknown law which stamps each epidemic with its special character from the commencement. The present epidemic was noticed as one essentially of a renal character; and the fact was remarked on, that some former epidemics have been distinguished by the same feature, while others have been characterized by absence of renal symptoms. He gave a few cases of inflammation of serous membranes subsequent to, if not consequent upon, the renal disorder of scarlatina. Such inflammations, described as among the secondary and tertiary direct effects of the morbid poison by most writers, were viewed as more properly falling under the head of sequelæ.

DR. WEBSTER said, that as upwards of 3,550 persons had died of scarlatina in London alone, since the 1st of July last, consequently, according to the ratio of deaths reported by the author, of one in seven, about 25,000 cases of this disease must have occurred in the metropolis, being the greatest epidemic of the kind which had been known for many years.

Dr. Snow said, he was of opinion that the kidneys were liable to be affected as well as the skin, tonsils, or mucous membrane, in the first days of an attack of scarlet fever. In two or three cases where children died during the eruption, he had found the lining membrane of the pelvis of the kidney red and injected, and believed that the inflammation extended to the lining of the tubuli uriniferi. He considered that this first affection of the kidney, either by causing a desquamation of the epithelial scales, analogous to the shedding of the cuticle, or in some other way, led to secondary congestive disease of the kidney, which was the immediate cause of the anasarca, and inflammation of the serous membranes. In those cases related in the paper, in which the albuminuria and anasarca were supposed to be the first and only effects of the scarlatinal poison, he (Dr. Snow) considered that there must have been a mild attack of the fever some three weeks previously, which had been overlooked by the parents.

Dr. Miller replied, that he had had no opportunity of examining the kidneys during the eruptive stage of the fever. When death took place at a later period, after dropsy had existed, there was no redness of the pelvis of the kidney, but great congestion of the cortical substance, as shown by the mottled condition of the exterior of the organ.

Dr. Basham.—Every one must have been struck with the peculiar tendency of the late epidemic to be attended with dropsy. This sequence was so common, that he had thought it had occurred even more frequently than the author had stated. The dropsy depended on the effect of the poison itself on the kidneys.

Dr. Stewart thought that the dropsy must depend on some cause independent of the poison of the disease, or we should not have it more frequently in one epidemic, than in another.

MEDICO-CHIRURGICAL SOCIETY OF EDINBURGH.

Fourth Meeting of the Session. Wednesday, January 17, 1849.

Dr. Begbie, V.P., in the Chair.

Case of Variola, in which the Eruption was found on the Mucous Membrane of the Colon.—Dr. George Paterson, one of the Physicians of the Infirmary, read a case of Small-pox, occurring in an unvaccinated boy, five years of age, which proved fatal on the fourth day of the eruption,—death having been preceded, for about twenty hours, by discharges of blood from the bowels, nose, and mouth, and the appearance of masses of ecchymosis beneath the integuments of the lower limbs. He exhibited a drawing of the appearances found in the colon after death. There had been pustules, greatly resembling those met with on the skin; and superficial incrustations most abundant, and running together in the lower part of the intestine. Although most medical authorities were opposed to the opinion that Small-pox could exist upon the mucous membrane of the intestines, it was maintained, and cases in support of it recorded by Blane, Rostan, Froriep, and others. When we consider the analogies between mucous membranes and the skin; the fact pretty generally admitted, that Small-pox pustules can occur on certain of the mucous membranes; the additional fact, that they have been met with on membranes entirely different in their nature, as the serous coverings of the liver and spleen,—there seems no good reason to doubt the possibility of their occasional occurrence in the intestinal canal. The appearance is extremely rare; but this may depend on the isolation of the mucous membrane of the bowels from the external air, and on the secretions and other matters which are more or less constantly in contact with its surface, modifying the appearance, and preventing the maturation of the pustule. In the present case, death occurred so unusually early, that there had probably not been time for these causes to produce their usual results; either by obliter-

ating the pustule altogether, or by converting it into an ulceration, which, when met with, many will not allow to be other than the mucous follicles themselves inflamed and ulcerated.

Dr. W. T. Gairdner, Pathologist to the Infirmary, (who had made the post-mortem examination along with Dr. Paterson), said, there could be no doubt that the pustules in the colon were variolous. The variolous matter was always deposited, when in the skin, in the lower layers of the epidermis, and between it and the corion, which was only superficially ulcerated. In mucous membranes, the matter was thrown out between the epithelium and the sub-mucous layer, and such was the case in the present instance; for, on removing the crust, the injected sub-mucous layer was seen flat and unbroken, excepting by a few minute points of superficial ulceration. This superficial form of disease could never be mistaken, as had been alleged, for the affection of the solitary glands, which invariably extended through the whole depth of the sub-mucous layer.

Aneurisms of the Left Ventricle of the Heart.—Dr. Halliday Douglas presented a specimen of Aneurisms of this description. There were two aneurismal sacs,—both near the apex of the heart, and communicating freely with the cavity of the ventricle. Each sac was about the size of a chesnut: one was empty, and communicated with the ventricle by an orifice having a diameter of three-quarters of an inch; the other sac contained a decolorized fibrinous clot, with a small cavity in its interior, and communicating with the ventricle by an orifice less than a quarter of an inch in diameter. The margin of the orifice of this sac was *firm*, almost cartilaginous, and perfectly *smooth*. In several other points of the ventricular surface there was the appearance of the commencing formation of a similar sac. The heart was increased in bulk; its weight not stated. The ventricles, especially the left, were dilated. The endocardial surface was opaque and indurated; the valves were competent. Chronic adhesion of the pericardial surfaces existed in different situations, more extensively on the surface of the left ventricle, and on the surface of both aneurismal sacs. The state of the other organs was not described, except the kidneys, which were granular, and the liver, which was healthy. The patient was a female, aged 30, admitted into the hospital under charge of Dr. Douglas, November 1847. The symptoms of cardiac disease had not been distinctly developed till within a year of her death. Previous to this, she had suffered from chest symptoms, arising from chronic bronchitis, which latterly became intense; and she had worn a tracheotomy-tube for twelve years. She was under the care of Dr. Douglas for ten days only previous to death. At this time there was general dropsy; there were the signs of intense general bronchitis, and a much enfeebled circulation; the cardiac signs were chiefly referable to the dilatation; but a murmur accompanied the first sound. The urine had long been exceedingly scanty; it was free from albumen till shortly before death.

Dr. Spittal remarked that the case was rare. He asked Dr. Douglas his opinion as to the mechanism by which such sacs were produced? Was there ulceration of the membrane lining the ventricle, and a consequent yielding of its parietes during the contraction of the heart?

Dr. H. Douglas did not think that there was any ulceration—certainly there was no appearance of loss of substance where the sacs were formed. It was quite possible that chronic inflammation of the endocardium had been the primary lesion, and that that had been followed by loss of tonicity, and mechanical expansion of a portion of the heart.

Aneurism of the Vessels at the Base of the Brain.—Dr. H. Douglas also presented a specimen of Aneurism of the circle of Willis. The sac involved the internal carotid artery, where it divided into its terminal branches,

and it was about the size of a field bean. It was removed from the body of a woman, aged thirty-nine (not seen by Dr. Douglas during life), who was suddenly attacked, eight days before death, by headache and vertigo. She afterwards became insensible, and died in the course of two hours. She was stated to have suffered from headache fourteen years previously, when a seton was introduced, and other treatment employed. There was a layer of blood effused on the surface of the arachnoid generally, but to a greater extent at the base of the brain. No calcareous deposit existed in the cerebral or other vessels.

Ecchymosis in the Colon in Cholera.—Dr. W. Robertson, Physician to the Infirmary and Cholera Hospital, showed a specimen of extensive extravasation of blood beneath the mucous membrane of the colon. The patient had died in the stage of collapse; there had been no unusual symptom, except the discharge of reddish-brown fluid from the bowels. Stools of the same apearance had been observed in other cases during the present epidemic, but were not always associated with the ecchymosed condition of the mucous membrane.

Dr. Spittal adverted to the frequency of ecchymoses in the course of the nerves, particularly the pneumogastric nerve in the neck, during the last epidemic of cholera.

Dr. W. T. Gairdner had examined the pneumogastric nerves in a number of cases, but had only once seen any considerable ecchymosis, and this was in a case in which extravasation had occurred in several places. Ecchymoses were very common in cholera in the intestines, and also on the pericardium, the conjunctiva, and the pleura. The blood coagulated very firmly in the heart and great vessels, and was in general very dense and viscid. The microscopic elements of the blood did not appear to be altered.[1]

Fifth Meeting of the Session.—Wednesday, February 7, 1849.
James Syme, Esq., President, in the Chair.

Safety and Suitableness of Chloroform as an Anæsthetic Agent in some of the more Complex and Serious Operations in Surgery. By Dr. William Keith, Surgeon to the Aberdeen Infirmary.—In two cases of lithotomy, violent convulsive struggling came on after the patients were secured for operation and chloroform administered. These cases induced Dr. K. to call in question the propriety of using chloroform in like cases; but, during a recent visit to Edinburgh, having witnessed operations performed on patients in a state of anæsthesia, by Professors Simpson, Syme, and Miller, he concluded, "that the mode of administration, and not the chloroform itself, had been in fault in two cases referred to. Four cases of stone having offered immediately on the author's return to Aberdeen, each was subjected to the operation best suited to the case, and all to the anæsthetic influence of chloroform. The *first* patient was a man aged 56, who had a calculus crushed by the lithotrite. The chloroform agreed well in this case, and facilitated the operation by rendering the sphincter of the bladder quite passive. This man made a good recovery. The *second* patient, a child aged three, was sounded, and had a small calculus extracted by the lateral operation of lithotomy, without struggle or suffering. Recovery soon followed. The *third* patient, a man aged 46, had a stone weighing seven drachms extracted by the lateral operation; suffered nothing, and recovered. During the operation, the stomach and bowels discharged their contents with force, and the bladder at the same time contracted spasmodically. The *fourth* patient, a man aged 67, was

[1] Ecchymoses are common in all diseases in which the blood is fluid, and especially in such affections as cholera, in which the serum easily separates from the solid constituents of the blood. It is, from chemical and microscopic researches chiefly, that we may expect to learn the true pathology of cholera.—Ed. *Lond. Journ. of Med.*

subjected to the high operation, and had two calculi, each two ounces in weight, extracted. He suffered nothing during the operation, but died five days after, from the effects of infiltration of urine about the neck of the bladder.

The high operation was resorted to in the last case, because the calculi were known to be large, and because, when the stone exceeds two ounces, this operation ought to be preferred to the lateral operation. The size of the stone influences very materially the success of the operation by the lateral method; and in an experience extending over eighty-three cases of lithotomy, including both hospital and private practice, Dr. Keith has arrived at results very similar to those published in the tabular form by Dr. SIMPSON, in the *Monthly Journal of Medical Science*, for November 1847. In fourteen cases, the stone ranged from *two* to *four* ounces; of these, seven recovered, and seven died. Therefore, Dr. K. recommends the lithotrity for all stones weighing less than *half an ounce*, and of lateral lithotomy for all stones weighing less than *two* ounces. He desires the revival of the high operation for such as are larger, as the soft parts escape bruising; and bulk in the stone ceases to be the source of danger, the outlet not being confined by a solid arch of bone. The statistics of the author's experience in cases of stone are as follows:—

68	stones, under ½oz.,		removed by	lithotrity.
69	do.	do. 2oz.,	do.	lithotomy.
14	do.	from 2 to 4oz.,	do.	do.
14	do.	do.	do.	unfit for any operation.
Total . 165.				

"Giving, of cases that offer, with stones weighing above 2 ounces, 1 in $5\frac{5}{70}$; and of such, in which operative interference may be thought of, 1 in $11\frac{10}{14}$. So that in every 12 cases of stone that may occur, 5 may be cured by lithotrity, 5 by lateral lithotomy, 1 by the high operation, and 1 rejected as *unfit*." Dr. K. concluded with an expression of opinion, based upon patient and dispassionate trial, "that chloroform, as an anæsthetic agent, is *suitable*, *safe*, and *effectual* in the severest operations in surgery."

MR. SYME did not agree with the author in recommending the high operation even for the removal of large calculi. He feared, also, the consequences likely to result from the performance of lithotrity upon *insensible* patients, by operators less expert than Dr. Keith. If pain was given by the operation of cutting the stone, he believed some mischief was being done; and the mere abolition on the part of the patient, of the power of expressing suffering, could not be held as evidence that the operation was well conducted. He agreed with the author in all that regarded the use of chloroform in lithotomy. He had himself used chloroform in every operation in which it could conveniently be given, and without any bad consequence, fairly attributable to its use. By the use of chloroform the shock of very severe operations is lessened. In a case of amputation at the hip-joint, recently performed by him at the Infirmary, upon an exhausted subject, recovery was owing, he believed, to the employment of chloroform during the operation.

DR. SIMPSON considered the observations made by the chairman the highest possible evidence in favour of the use of chloroform in surgery.

PROFESSORS MILLER, SIMPSON, AND SYME, MR. ROBERTS, and DR. J. A. ROBERTSON, made some remarks on sexual manifestations, cursing, obscene language,—as alleged effects of chloroform. None of the speakers had observed cases of sexual excitement; but the use of improper language had been frequently noticed, during operations in the Infirmary and elsewhere. Mr. Miller thought that these unpleasant manifestations were most frequent among patients from the lower class, addicted to the abuse of ardent spirits. They might often be prevented by inducing sleep rapidly, by avoiding noise, motion, or surgical examination, while administering the chloroform.

Suction-Tractor as a Substitute for the Midwifery Forceps.—Dr. Simpson exhibited to the Society an instrument termed the air tractor, a substitute for the midwifery forceps. He illustrated the suction principle, on which he had constructed it, by drawings and by specimens of the *remora*, the *limpet* (*patella*), etc., and showed, by experiment, with a loaded Salter's balance, that the instrument enabled the operator to exert a force quite sufficient for all the exigencies of midwifery. (vide p. 283.)

Mr. Syme had seen, in cases of lacerated perineum, deplorable evidence of the mischief inflicted by rash hands, working in the dark, with the obstetric forceps. He sincerely hoped, that Dr. Simpson's invention would supersede more dangerous means of delivery.

Dr. Margulies and Mr. Harvey had witnessed Dr. Simpson's experiments in the Maternity Hospital, and considered the instrument safe and efficient.

ACADEMY OF MEDICINE, PARIS.

January 2, 1849.—M. Velpeau, President.

Right of M. Bérard to sit in the Academy.—The President stated, that by the constitution of the Academy, as settled 20th December, 1820, the Dean of the Faculty of Medicine had a right, *ex officio*, to a seat in the Academy. M. Bérard then, though not before his appointment, was now, in virtue of it, a member.

M. Bérard.—Gentlemen, this is the first time that a physician has been called upon to sit among you, who has not been chosen by your suffrages. My predecessors in the Deanship had long been members of this Academy, before their appointment to that office. I feel that my position here is exceptional, and perhaps unfavourable. (*Cries of No! no!*) I must, at least, explain how it is that I have always abstained from becoming a candidate. This arose from no under-estimate on my part of the labours of the Academy; from no want of appreciation of the honour of having my name enrolled among so many that are illustrious: but I fancied that my pursuits were of too general a character, to entitle me to ask your suffrages. Another cause also may have influenced me: I allude to the admirable reports of your discussions, which the zeal of the medical journalists enabled me to read at my country house. The medical press is an accomplice with me in my neglect. For the present, the duties of my office must fix me in Paris. I will receive at its source that instruction, which I have hitherto taken second-hand. If, by-and-bye, I lose my office of Dean, and with it my right of sitting in this Academy, my privation of the latter will leave me not easily consolable.

Cholera.—M. Bally read a note upon the Cholera at Lille (Pas-de-Calais). He stated that the disease had radiated from a vessel arrived from Dunkirk, manifesting itself in the houses on the banks of the canal. Most of the individuals seized were the inhabitants of nasty lanes, close side-streets, or of crowded courts, where the inhabitants are crammed together in small apartments, without sufficient air or light.

M. Bally stated, that the cases of cholerine were numerous, and could be prevented from proceeding into cholera, by inducing sweating, administering repeated doses of ipecacuan, and adopting other necessary measures. During the nights of 19th and 20th December, the wind having changed from west to north, and frost having set in, no new cases occurred. But, upon a west wind again prevailing, fresh cases occurred. In this epidemic, as in most others, it was rare for a circumscribed locality, and inhabited by several families, to furnish only a single patient. One court, for example, furnished numerous cases of *cholerine*, some of cholera, and four deaths.

M. Bally stated that M. Kuhlman had made an analysis of the intestinal discharges of the cholera patients; and that, as a general result of his researches, it might be stated, that a notable quantity of albumen was found to exist in them.

CHLOROFORM.—M. BAILLARGER spoke in continuation of an adjourned discussion upon this subject. He stated, that he believed that the young girl, at Boulogne, was a victim to chloroform. He thought that the Academy was bound to make known to the medical world, that chloroform possesses dangers, which its advantages ought not to make us forget.

JANUARY 9, 1849.—M. VELPEAU, PRESIDENT.

CHLOROFORM.—M. JULES GUÉRIN spoke at great length, and with much warmth, against the report which had been made to the Academy.

M. BÉRARD substantially agreed with M. Guérin.

M. PARCHAPPE made a lengthened criticism upon the address of M. Jules Guérin. The topic to which he, as well as the previous speakers, chiefly directed attention, was, whether or not the young woman, the patient of M. Gorré, at Boulogne, died from the effects of chloroform.

JANUARY 16, 1849.—M. VELPEAU, PRESIDENT.

CHOLERA.—M. LEVIEZ (of Arras) announced to the Academy, that the cholera was making progress in the department of the Pas-de-Calais. In one house in the commune of Feuchy, seven persons had been attacked in succession, of whom four had died in fifteen, twenty, and thirty-six hours. When M. Leviez visited this house, he found three patients, who had been confined to bed for twenty hours, and who presented all the unequivocal symptoms of Asiatic cholera. It appears, from official statements, that in the department of the North, between the 15th November and 29th December, 246 decided cases of cholera had occurred, of which number 142 had died, and 57 recovered. In Lille, the number of deaths was 44, up to that date.

ETHER AND CHLOROFORM.—M. GIRARDIN (of Rouen), transmitted, in the name of the Academy of Sciences of that town, the copy of a report on the use of ether and chloroform. It contained the following conclusions.

The Academy of Sciences of Rouen believes that it will be of advantage to suggest to the authorities:—1, To exercise *surveillance* over the sale of ether and chloroform, and to place them under the same restrictions as poisonous substances; 2, To render it necessary for these substances to be employed only under the superintendence of a medical man; 3, To exercise supervision over the sale of the apparatus used.

VACANT PLACE IN THE ACADEMY.—The PRESIDENT announced, that in consequence of the decease of Messes. Poirson, Deneux, and Lisfranc, there was a vacant seat in the Academy. MM. Deneux and Lisfranc having belonged to the section of operative medicine, the vacancy was, according to rule, declared to have occurred in that section. An early day was fixed for proceeding with the election.

CHLOROFORM.—M. ROUX stated that, when recently at Algiers, he had learnt with surprise, that the use of chloroform had been interdicted in the military hospitals.

M. BÉGIN requested permission to interrupt M. Roux for one moment, to state, that the fact mentioned by M. Roux, was perfectly correctly given. When chloroform was announced, it seemed prudent for the military Board of Health to interdict military surgeons from using it. It was then untried, and experience had not, as yet, given any verdict regarding it; and "we were not willing to make experiments upon our soldiers." Military surgery rejoices in, and accepts every improvement; and now, when experience and observation have spoken favourably of chloroform, its use is no longer interdicted. (*Applause.*)

M. ROUX then resumed his address, which was devoted to the consideration of the four following questions:—1. What are the physiological effects of

chloroform? 2. Can anæsthesia of itself prove fatal? 3. What is the cause of death in those unfortunate persons who have perished immediately after the employment of chloroform? 4. What precautions ought to be taken, and what rules followed, to prevent the occurrence of such accidents? In the course of his speech, M. Roux, after remarking that it was not necessary for M. Jules Guérin to have provoked him to speak on his own unfortunate case, made the following statement to the Academy:—"Some months ago, I had occasion to operate on a woman, fifty years of age, with a cancerous tumour of the mamma. She was very much enfeebled. Besides the tumour in the breast, the glands in the axilla were very much diseased, and required removal. Without hesitation, I subjected the woman to the influence of chloroform. Whilst I removed the tumours, she slept soundly. I had hardly finished the first operation, when she awoke. It was still necessary to extirpate the glands from the axilla; and I begged the patient to allow me to do this, without again having recourse to chloroform; to which she consented. The operation was long and laborious. That a bandage might be rolled round her body, she was seated in a chair; and, when in this position, she fainted, and every effort to re-animate her proved unavailing; the syncope was mortal. The question arises, did this patient die from chloroform inhalation? I think not; the case seems to me to have been one of fatal syncope, such as occasionally follows severe operations, and of which I have seen several examples before anæsthetic agents came into vogue, and of which there is hardly a surgeon who cannot cite an example." With reference to the fatal cases mentioned in the report, M. Roux thought that the issue must be imputed to the chloroform. M. Jules Guérin had said, that in all the fatal cases, a sponge or handkerchief had been used, which is quite true. It may thence be argued, that the death of the unfortunate patients must be imputed to this method of administering the anæsthetic agent. Nevertheless, our President uses no other means, and, as yet, no accident has occurred in his practice. Almost all the subjects of the fatal cases have been women. Women are, in fact, most susceptible to anæsthetic agents. M. Roux expressed his belief, that asphyxia, properly so called, pulmonary apoplexy, or extreme intoxication, might take place. He had no doubt, that in all the cases alluded to, chloroform was the cause of death; but this was to be imputed, not to the chloroform itself, but to accidental circumstances, and to the use of defective apparatus. The total number of accidents is small, and does not justify the exaggerated apprehensions of some severe critics. M. Roux proceeded to examine the different ways in which sudden death might take place; viz., death by the lungs, death by the heart, and death by the brain. With reference to the Boulogne case of M. Gorré, he (M. Roux) attributed death to the entrance of air into the circulatory system. In reply to a question suggested by M. Jules Guérin, with reference to the remote influence of chloroform upon operation cases, M. Roux stated, that during the year 1847—the reign of ether—he performed 105 capital operations, and lost 27 of the patients. In 1848—the reign of chloroform—out of 101 capital operations, he had 28 deaths. M. Roux insisted upon a suitable apparatus being used, in preference to a towel, a handkerchief, or a sponge; to respect the susceptibility of the pulmonary tissue, and to cause to enter, along with the chloroform, as much as possible of the atmospheric air; not to induce anæsthesia by chloroform in cases of operation on the rectum; to discontinue the inhalation whenever insensibility is complete. In conclusion, he said, that if he supposed it necessary to be so full of fears, and to take all the precautions recommended by some surgeons, he would for ever renounce the use of chloroform.

M. Rochoux had no doubt, that the Boulogne patient was killed by the chloroform; and he thought that this opinion was strengthened by the fact of air having been found in the organs of circulation.

JANUARY 23, 1849.—M. VELPEAU, PRESIDENT.

CHOLERA.—M. RAVIN (of St. Valery) wrote to state that Cholera had not yet shown itself at St. Valery, or the adjoining villages; but that, in June and August last, he had had two patients suddenly seized with Cholera in a very violent form; and that since that time, up to the end of the year, cholerine had been very prevalent.

TREATMENT OF ASIATIC CHOLERA BY INTERNAL AND EXTERNAL MEANS.—M. BLATIN stated, at great length, the principal treatment which he was in the habit of adopting in the district where he practised. He said, that out of 225 severe cases of Cholera, he had only had 44 deaths, although out of 461 patients, equally affected with the disease, the mortality rose to 196. The internal treatment which he recommends, in the majority of cases, consists, almost exclusively, of the administration of cold water in large doses. We know the extreme thirst which torments Cholera patients; and we know the ardour with which they beg for cooling drinks. The observation of this fact induced M. Blatin, after some trials, not only to satisfy the desire of the patients, but to induce them to take quantities of liquid, which would appear enormous, were we to lose sight of the vomiting and purging. Some of his patients drunk between five and six pailfuls of cold water in the day. This remedy favoured the return of heat in a very manifest manner, and assisted in modifying the secretions, with regard to their sero-albuminous character, to such an extent, that, at the commencement of the treatment, the patients drank with extreme avidity. With reference to bleeding, M. Blatin thus expressed himself:—"At the commencement of the disease, moderate bleeding does not appear to me to be injurious; it has appeared to me to promote an improved state of the blood. During reaction, I have rarely ever found it necessary; this is probably due to my having watched carefully the approach and progress of that state, and not having hastened it by a stimulating plan of treatment. Leeches, which I have frequently applied to the epigastrium, have sucked but little, and have sometimes died on the place; and there has been no hæmorrhage after their removal. During the algide period, I have found it useless to attempt bleeding from the arm, or by cupping-glasses. I have opened the temporal artery at least ten times, and usually, after from 100 to 150 grammes (from 3½ to 5 oz. of English avoirdupois weight) of slightly red blood, the bleeding has ceased spontaneously. In three cases I observed some bubbles of gas escape with the first drops of liquid, from the opening which I had made in the arm. The result in each of these cases was fatal. Is there a decomposition of fluid in Cholera patients? I am inclined to think that there is."

CHLOROFORM.—M. GIBERT read, for M. CASTEL, a paper on the Chloroform discussion, in which the author expressed his opinion, that Chloroform acts upon the nervous system and upon the blood, and upon the latter more violently when it is diseased or altered in its composition; as was the case in the chlorotic patient of M. GORRÉ, at Boulogne. He urged the abandonment of Chloroform for Ether, which he regarded as a much less hazardous substance for inhalation.

M. AMUSSAT spoke at great length, entering minutely into the controversy, both personal and scientific, which has arisen on this subject between M. MALGAIGNE and M. JULES GUÉRIN, each of whom have their supporters among the medical papers of Paris. M. Amussat is decidedly in favour of the use of Chloroform in surgical operations; and considers it of great value as an auxiliary means in diagnosis, especially when one has to do with timid people, or when tedious and painful explorations are required.

M. ROUX, in reply to a question of M. Jules Guérin, proposed at the preceding meeting of the Academy, brought forward a statement with reference

to the mortality after capital operations. He said, that in 1846 the mortality was a third ; and that in 1847 and 1848, that is, since the employment of Ether and Chloroform, it had not exceeded a fourth.

M. Jules Guérin : M. Roux has not understood my question. I asked : What were the results, and what were the consequences, of operations performed under the influence of Chloroform ? But M. Roux has only stated the results. Now it has often happened, that untoward occurrences—and, in particular, gangrene of the lungs—have occurred in those cases in which Chloroform has been used.

Treatment of Strictures of the Urethra.—M. Honoré read, for M. Rigaud of Strasburgh, a notice of a new instrument, invented by the latter, for the treatment of Strictures. The author believes that, by the assistance of this instrument, dilatation can be satisfactorily accomplished. He employs a catheter of very small diameter, which can, when once introduced into the bladder, equally, gradually, regularly, and in parallel manner, dilate the urethra in its whole length. The memoir, along with the instrument of M. Rigaud, were referred to MM. Ségalas and Huguier to report.

January 30, 1849.—M. Velpeau, President.

Absence of Cancer in Egypt.—M. Prus stated that Cancer was almost unknown in Egypt; and recommended a residence in that country, as a preventive of that affection in persons apparently predisposed to it.

Chloroform in Hydrophobia.—M. Prus had administered Chloroform to a child labouring under hydrophobia, with the effect of producing a tranquil sleep for five minutes; after which the symptoms returned, and death followed.

Chloroform.—M. Jules Guérin commented, with much warmth, upon a remark made by the reporter on Chloroform,—that "an offence is committed against observation and science, when cures are related which have never occurred." He considered this as a personal insult.

M. Malgaigne alluded to the different explanations which had been given of the cause of death in the Boulogne case. His conclusion was, that the death was not due to chloroform, this being a substance which is found always to produce intoxication and insensibility before death, which did not occur in M. Gorré's case. M. Malgaigne then replied to the objections of MM. Blandin and Jules Guérin, each of whom attributed the death to chloroform, and considered the presence of air in the vessels to have been produced by that substance. He objected to the experiments made by M. Jules Guérin, that the doses given by him were excessive, and, consequently, likely to produce death ; while, in the Boulogne case, the quantity employed had been small. M. Malgaigne agreed with M. Velpeau, that chloroform sometimes produces death, but considered it not to be by direct action, and especially, not by poisoning. M. Baillarger had thought death might have been due to syncope, in the Boulogne case : this might possibly be so, if the existence of air in the veins were not a sufficient cause.

February 6, 1849.—M. Velpeau, President.

Strictures of the Urethra.—M. Gouyon, physician at Clermont-Ferrand, presented a model of an instrument for dilating the urethra, which was referred to the committee appointed to examine the instrument of M. Rigaud.

Chloroform.—M. Rochoux called the attention of the Academy to some calculations which he had made, showing that the introduction of air into the veins, required nearly the same time as chloroform to produce death. In the case of M. Gorré, the presence of gas in the veins might be supposed to be due to the chloroform. This was by no means unfrequent, having occurred

in hundreds of other experiments and cases. His conclusion was, that whether, besides the deleterious action on the nervous system, chloroform chemically promoted a disengagement of gas in the blood, or whether, after having become liquid by mixture with the blood, it suddenly assumed the gaseous state, it was not less the only cause of death, directly or indirectly, in the case under consideration.

M. BLANDIN considered that chloroform was the cause of death, and proposed the following as an amendment to the first conclusion of the Commission: "Although the data furnished by examination into the Boulogne case have not been so explicit as might be desired, yet, on considering all the circumstances of the case, the Academy is led to believe, that death resulted from chloroform; but it does not consider M. Gorré to be responsible for its occurrence."

M. JULES GUÉRIN wished it to be understood, that the attacks he had made on the report, were not directed against the members of the Commission, but against the report, so far as it was the work of M. Malgaigne.

M. MALGAIGNE would not have replied to the attacks of M. Jules Guérin, had he known they were personally directed against him.

M. JULES GUÉRIN had attacked the report of M. Malgaigne, and not his person.

M. GIBERT considered it absurd to cite the exceptional cases, in which death had followed the administration of chloroform, as an argument against its use. Many cases of sudden death occurred during operations, which could not be accounted for. As to the dose, that could not be fixed, from its varying in different persons; and he agreed in the opinion of M. Roux, that if excessive precaution were indispensable, it would be better to renounce the use of chloroform. He preferred a handkerchief or sponge as the best means of administering it: and thought there could be no doubt that chloroform was preferable to ether, from the irritation which the latter produced.

M. BAILLARGER said that no agent had had such a number of experiments performed on it as chloroform. There were two questions to be considered: 1. Has chloroform been employed without danger in a large number of cases? 2. Has this agent, on the other hand, tended to produce death in some exceptional cases? The first question could be answered without hesitation; but it was no less certain, that fatal cases, though fortunately rare, sometimes occurred. The effects of chloroform vary according to the susceptibility of the individual, or to the quantity of food in the stomach, which was found filled in one of the fatal cases in England: syncope may also occur at the same time, but independently of the administration of the chloroform, and prove fatal by being prolonged by the chloroform. However this might be, the consequences of the union of syncope with the effects of chloroform ought to be specially noticed in the report.

THE REPORTER read the conclusions at which the Commission had arrived, concerning the Boulogne case:

1. In the medico-legal fact submitted to our notice, we have found no indications of the poisonous action of chloroform; and consequently, we reply to the minister, that the patient of M. Gorré did not die from the effect of inhalation of that agent.

2. There have occurred a great number of analogous cases of sudden and unforeseen death, during operations, without any administration of chloroform, in which the most minute examinations have failed in detecting any assignable cause of death.

3. In the case in question, the most probable cause, under all circumstances, seems to have been the mixture of a considerable quantity of gas with the blood.

These Conclusions were adopted; as were also the following, contained in the second part of the report:—

1. Chloroform is one of the most powerful agents which can be referred

to the class of poisons, and should only be employed in the hands of experienced persons.

2. Chloroform is liable to irritate, by its odour and contact, the air passages; hence great caution is necessary, when there is an affection of the heart or lungs.

3. Chloroform possesses a peculiar toxical action, which medicine has turned to profit by arresting its progress, as soon as insensibility is produced; but when administered too long, or in too large doses, it may produce immediate death.

4. Certain modes of administration increase the danger; thus there is risk of asphyxia, when the anæsthetic vapour is not sufficiently mixed with air, or when respiration is not free.

5. All these dangers may be escaped by observing the following precautions:—1. To abstain from or stop its administration, in all cases proved to be contra-indicated, and to examine carefully into the state of the organs of circulation and respiration. 2. To take care, during inhalation, that a sufficient quantity of air be mixed with the chloroform, and that respiration be entirely free. 3. To suspend the inhalation as soon as insensibility is procured, and only to repeat it if sensibility return before the end of the operation.

6. It is not proper to administer chloroform after a meal.

FEBRUARY, 15, 1849.—M. VELPEAU, PRESIDENT.

CONTAGION OF TYPHUS FEVER.—M. BRICHETEAU, for himself and MM. Louis and Martin-Solon, presented a report on some facts communicated by M. MONTROL, physician to the hospital at Langres, on the contagion of a typhoid fever which had prevailed at Chaudenay (*arrondissement* of Langres, Haute-Marne). The author adduced facts in support of the opinion that typhoid fever is contagious: but his facts do not appear so conclusive as those of some other observers.

AMPUTATION AT THE TIBIO-TARSAL JOINT.—M. ROBERT, surgeon to the hospital Beaujon, presented a patient on whom he had performed amputation at the tibio-tarsal articulation. He said that surgeons were not agreed on the question, as to how patients, on whom this operation had been performed, could stand upright or walk. Could they rest upon the stump without feeling pain, and without incurring the danger of its becoming irritated or ulcerated? Or must the support be used, which is employed after amputation of the leg above the ankle? The present case is in favour of the possibility of direct support being employed. The patient was a girl, thirteen years old, of scrofulous constitution, who had the left foot amputated for necrosis of some of its bones. The malleoli were excised. The healing proceeded rather slowly, being retarded by the stagnation of some pus; but in about six weeks, she was able to walk without pain or lameness, the stump being enclosed in a boot. The cicatrix is at the anterior part of the stump, and is subjected to no pressure nor friction in walking.

FEBRUARY 20.—M. BRICHETEAU, V.P., in the Chair.

HOMŒOPATHY.—M. GUÉNEAU DE MUSSY, for himself and MM. Andral and Chomel, read a report on the conduct of M. Léon Marchant, one of the physicians of the hôpital St. André, at Bourdeaux. The report stated that he treated his patients on homœopathic principles, and had thereby not fulfilled his engagements, made to the administrative commission of the hospitals at Bourdeaux.

ACADEMY OF SCIENCES OF PARIS.

January 2, 1849.—M. BOUSSINGAULT, Vice-President of the Academy in 1848, became President for 1849, in rotation.

M. Duperry was elected Vice-President for the year 1849.

Sir D. Brewster was elected a Foreign Associate, in the room of Baron Berzelius. (See p. 214 of last number.)

January 8, 1849.—Effects of Cauterization in Inoculation with Virulent Poisonous Agents.—M. Parchappe regretted that the confidence of medical men in this remedy had been shaken, especially in cases of the bite of a mad dog. He related the following experiments:—1. A quantity of extract of nux vomica, of the size of a pea, was introduced into a wound on the back of a young dog, and produced death in two hours. 2. A similar quantity was introduced into a wound in the foot. The limb was amputated. After twelve minutes, tetanus was complete, but was followed by recovery. 3. A wound in the foot, inoculated as above, was cauterized with a red hot iron. The result was recovery.

From these experiments it appears that the effect of nux vomica can be arrested by amputation, or destruction of the poisoned part. Now, as it appears that the virus of rabies requires a longer time to produce its effects than strychnia, the success of cauterisation in strychnia cases should encourage us to practise it, to prevent absorption of the virus, from the bite of a mad dog.

January 15, 1849.—Phenomena of Binocular Vision.—MM. Foucault and Regnauld communicated the results of some experiments which they had made on this subject.

January 15, 1849.—Starch from Horse-Chesnuts.—M. Belloc had prepared Starch from horse-chesnuts, in the same way as it is procured from potatoes, and found them to contain from 19 to 21 per cent. of this substance.

Typhoid Cholera.—Dr. Jules Perier, chief Physician of the Military Hospital at Calais, addressed a communication to the Academy, stating that the Cholera epidemic in the Pas de Calais in 1848-49, is not of the same nature, nor so fatal, as the Cholera of 1831. The present epidemic has presented some typhoid symptoms.

Diabetes from a large Dose of Nitrate of Potash.—This was a case, communicated by M. Cardan to M. Rayer, in which three ounces of nitrate of potash had been taken, by mistake, for two ounces of epsom salts. After the symptoms of irritant poisoning had abated, the patient passed upwards of a gallon of urine every night, which was found to contain sugar.

January 29, 1849.—Local Anæsthesia.—M. Jules Roux (of Cherbourg) communicated the account of a case of deep-seated angeioleucitis, for which he had amputated the thigh at the hip joint, and applied chloroform to the surface of the wound. The patient ultimately died from the absorption of purulent matter. He arrived at the following conclusions: 1, that amputation is sometimes proper in cases of deep-seated angeioleucitis; 2, that anæsthesia is capable of being produced, with safety, in a constitution weakened by suppuration; 3, that the production of local anæsthesia, by the application of ether or chloroform, for about five minutes, has no deleterious effect on the wound, nor on the system.

February 5, 1849.—Iodide of Potassium in Diseases produced by Mercury or Lead.—M. Melsens communicated, through M. Dumas, the results of his observations on the employment of Iodide of Potassium in cases of mercurial paralysis, and in chronic poisoning by lead. His object is to procure a soluble and easily eliminated compound of the metals retained in the body.

February 12, 1849.—Analysis of Cholera Fluid.—M. Corenwinder has made some analyses of cholera fluid, from which it appeared, that a notable quantity of albumen was found in the fluids taken from the intestines; little

or no albumen, some dry matter, and a large proportion of salts, in the stools; and, in the blood, the quantity of dry matter (*matière sèche*) was much greater, while the chloride of sodium was very greatly diminished.

Anæsthetics among the Chinese.—M. Stanislas Julien had found allusions to anæsthesia in surgical operations, in an old Chinese work, published at the commencement of the seventeenth century.

February 19, 1849.—M. Bernard read some Researches on the Use of the Pancreatic Juice in Digestion, an abstract of which we may afterwards publish.

Chloroform.—M. Coze, Dean of the Faculty of Medicine, at Strasburgh, communicated the results of some experiments he had made, by separately producing anæsthesia of the muscular organs of the brain, or of the spinal marrow. Anæsthesia is always produced, but the effects vary according to the structure and function of the organ placed under its influence. He considers that the chloroform is absorbed in the lungs, and that the blood hereby becomes impregnated. The cause of death, when chloroform has been administered, is probably the introduction of some liquid chloroform into the lungs.

Sounds of the Heart.—M. Wanner communicated his opinion that the Sounds of the Heart were due to the vibrations of an apparatus situated at a particular point of that organ. He considered the first sound as produced by the striking of the heart against the walls of the chest; the second, by the sudden relaxation of the muscular fibres.

MISCELLANEOUS INTELLIGENCE.

Poor Law Medical Officers.—A general meeting of Poor Law Medical Officers took place on Monday, February 19th, at the Hanover-square Rooms. Lord Ashley presided, and spoke at some length in support of the claims of the medical men, who were entrusted with the charge of the poor. He considered that they should have a suitable income, should be independent of the boards of guardians, and that their situations should be permanent. The secretary then read the report of the association. That document detailed the steps which had been taken to procure a redress of the grievances complained of, and of the interviews which had been held with the late president of the Poor Law Commission, with the Board of Health, and with other departments of the government. The late Mr. Charles Buller had expressed his opinion, that medical relief ought to be separated from the ordinary poor law administration. The medical officers of unions in England and Wales amounted to 3000, out of the 15,000 members of the medical profession; and the whole body was unanimous in condemning the present system of poor law medical relief. Out of the sum of £8,000,000, nominally applied to the relief of the pauper population, only £170,000, at most, was paid to the medical officers, to whom nearly 3,000,000 of the poor were entrusted for relief. The average allowance for drugs in each case was from 1*s.* 4*d.* to 1*s.* 6*d.*, while that of hospitals was 4*s.* 2*d.*, in dispensaries, 2*s.* 2*d.* The report concluded by quoting the opinion of Sir George Grey,—that the question of expense was subordinate to what was necessary in order to ensure efficient medical relief. The meeting was addressed by Mr. Lobb, Mr. Little, Dr. Sibson, Mr. Daniel, Mr. Wells, and other gentlemen, in support of resolutions having for their objects,—to secure increased salaries, by legislative enactments, independence of the boards of guardians, and permanent appointments, the offices being held under the supervision of medical inspectors, according to the suggestion of Dr. Southwood Smith. Mr. Wylde, M.P., proposed a total reform in the constitution of the medical profession, attributing the grievances complained of, to imperfections existing in that constitution. This resolution was with-

drawn, and, the others having been unanimously adopted, the meeting separated.

EDINBURGH CITY PAROCHIAL BOARD AND ROYAL INFIRMARY.—At a recent meeting of the Parochial Board, the subject of the arrangements with the Royal Infirmary, as to the future payment for patients was taken up. In 1846, the Board entered into an arrangement with the Infirmary, agreeing to give a sum on condition that they would take charge of all the pauper patients sent by the Board. £100 had been paid for the year ending March, 1847. In October, 1847, the Managers of the Infirmary resolved to charge either ninepence for each patient per day, or a guinea a-year. An Account had been rendered to the Board by the Managers of the Infirmary, for the year ending September, 1848, leaving a period of six months unaccounted for, charging the Board £982 for the patients which they had sent to the Infirmary. The Board offered £500; but the deputation whom the Managers of the Infirmary appointed to confer with them would not take less than £700; and it was understood that the Managers thought that the deputation did wrong in agreeing to come so low. Mr. LAW urged the Board to pay the £700; and he also stated, that as the Managers of the Infirmary had intimated to the Board that in future they would charge 9d. a day for each patient, the Board would have to consider whether they could keep their patients at a cheaper rate. Mr. MORTIMER said, that of this sum of £982 for the treatment of 1108 pauper patients for a twelvemonth, two-thirds of it was incurred by Irish paupers; there were only 370 Scotch patients, and 738 Irish. The Infirmary is an old building, and (as Sir George Ballingall has shown) quite unsuited to the wants of modern Edinburgh. During epidemics it is always dangerously overcrowded. A new Hospital is therefore urgently required; and one popularly constituted would command support.

NEW ANÆSTHETICS.—Mr. NUNNELLY, of Leeds, announces in the weekly Journals, that in a paper about to appear in the Transactions of the Provincial Medical and Surgical Association, he proposes, as two new and valuable anæsthetic agents, common Coal Gas, and the Chloride of Olefiant Gas, formerly called "Dutch Oil."

THE HOSPITALS OF PARIS.—In an official document, recently published by the French Government (in connexion with a scheme for the re-organization of the Hospitals and Asylums of Paris), we find the following interesting statistics of these Institutions:—"The management of Hospital Establishments in Paris, and of medical attendance at the homes of the patient, is under special regulations. This service involves, in receipts and expenses, the use of from 15 to 16 millions of francs, and employs 2,500 salaried officers. There are in Paris 15 hospitals, containing altogether 7,174 beds, and receiving annually 9,000 patients; four large alms-houses (*grandes hospices*), and seven asylums for 8,000 of the aged and infirm of both sexes. More than 100,000 persons receive medical aid at home, and 25,000 deserted children are taken care of. The hospitals are subdivided into *general* and *special*. In the first, acute diseases, wounds, etc., are treated. In the second, those cases are received which have a particular character, and call for a special mode of treatment. The GENERAL HOSPITALS, ten in number, are:—Hôtel Dieu, containing 810 beds; Sainte Marguerite, 300; La Pitié, 621; La Charité, 494; Saint-Antoine, 320; Necker, 329; Cochin, 125; Beaujon, 438; Bon-Sécours, 323; De la République, 600. The SPECIAL HOSPITALS are seven in number, viz.: Saint-Louis, containing 825 beds; Du Midi, 300; De Lourcine, 300; Des Enfants-Trouvés (Foundling Hospital), 600; Maison d'accouchement, 514; Maison des Cliniques, 120; Maison de Santé, 150. The above statistics are exclusive of the *hospices* or asylums for the various classes of indigent persons.

APPOINTMENTS.

FALCONER, Wilbraham, M.D., appointed Physician to the Bath United Hospital, in the room of Dr. Daniel, resigned.

HESTER, John Tarry, Esq., elected Surgeon to the Radcliffe Infirmary, Oxford, in the room of C. L. Parker, Esq., deceased.

MASPEN, G. B. Esq., elected House-Surgeon to the Staffordshire General Infirmary.

MILNE, Farquhar, Esq., elected Surgeon to the Chorlton-upon-Medlock Dispensary, Manchester, on January 25th.

OBITUARY.

BURNES, David, M.D. (formerly of London), aged 42, at Montrose, on the 2nd February.

CHALDECOTT, Isaac, Esq., aged 82, fifty-nine years Surgeon to the garrison of Portsmouth, at Dorking, on the 19th January.

COLEBOURN, H. Esq., Surgeon (formerly of Kennington), aged 46, at Hastings, on 23rd Jan.

DALLEY, Francis, M.D. (formerly of Stamford), aged 92, at Canterbury, on the 20th January.

FIFE, Thomas Kirkby, Esq., Surgeon, aged 72, at Gateshead, on 20th February.

FOWNES, George, Ph. D., F.R.S., aged 33, Professor of Practical Chemistry in University College, of phthisis, at Brompton, on February 6th.—Dr. Fownes was the author of the Actonian Prize Essay, noticed at p. 253, and also of an excellent Manual of Chemistry, compiled for the use of students.

GREENWOOD, George, Esq., Surgeon, aged 32, at Preston, on 9th February.

HOBSON, Nicholas George, Esq., Surgeon (late of London), at Madeira, on 4th February.

MACKINNON, William, M.D., F.R.C.P. of Edin., aged 33, at Aberdeen, on 24th January.

M'FARLANE, Dr., of Maybole, Perthshire, lately.

PEYSSON, Dr. A., Chief Physician of the Military Hospital, Lyons, lately.

QUENNELL, Robert William, Esq., Surgeon, at Hornchurch, Essex, on 3rd February.

RENAULT, Dr., of Metz, author of "Reflections on the Nature of Neuralgia", and other productions, lately.

SOPER, John, M.D., aged 52, at Ashburton, Devon, on February 6th.

WATSON, Geo., Esq., Surgeon, of Glasgow, suddenly, aged 58, at Glasgow, on 17th February.

BOOKS RECEIVED.

BELL on Cholera and Ague. London: 1849. BLACKLOCK on Epidemic Cholera. Madras: 1848. BURGESS on Eruptions. London: 1849. COLLIER'S Code of Safety. London: 1849. LEE (Edwin) on the Brain. Edinburgh: 1848. MADDEN on Pulmonary Consumption. London: 1849. MAUNOIR, La Porrette et Monte-Catini. Florence: 1848. MAUNOIR, Résumé des Rapports sur la Porrette et Monte-Catini. Florence: 1848. MARTIN on the "Undercliff," Isle of Wight. London: 1849. PROCEEDINGS of State Medical Convention. Lancaster, U.S.; 1848. PROCEEDINGS of American Medical Association, Vol. I. Philadelphia: 1848. PROCEEDINGS of National Medical Convention at New York and Philadelphia. Philadelphia: 1847. RANKING'S Retrospect, Vol. VIII. London: 1849. RAYNER on Cod liver Oil. London: 1849. REID (James) on Infantile Laryngismus. London: 1849. UNDERWOOD'S Medical Appointment Book. London: 1849. WIGLESWORTH on the Dependence of Animal Motion on Gravity. Swansea: 1849.

NOTICES TO CORRESPONDENTS.

The COMMUNICATIONS of Drs. JAMES BIRD, CORMACK, and TYLER SMITH, announced on the cover of last number, are unavoidably postponed, for want of space: and, for the same reason, the conclusion of the review of pamphlets on Cholera is delayed. A Paper, by Dr. MARSHALL HALL, has been received, and will appear. The authors of other communications will speedily be written to.

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ORIGINAL COMMUNICATIONS.

CONTRIBUTIONS TO THE PATHOLOGY AND TREATMENT OF CHOLERA.

By JAMES BIRD, A.M., M.D., formerly Surgeon of the European General Hospital at Bombay, and late Physician-General, Bombay Army.

INTRODUCTORY REMARKS.

In my previous contributions to THE LONDON JOURNAL OF MEDICINE, on the Pathology and Treatment of TROPICAL FEVERS, the relation between the algide stage of their intermitting and remitting forms, and that of Cholera, was briefly noticed. The analogy of the phenomena accompanying the reaction and hot stages of these fevers, with the febrile or consecutive stage of Cholera, was also brought under consideration, and stated to be referable to an increased flow of blood through the spinal marrow and its dependent nerves, similar to that which seems to be associated with the symptoms of the hot stage in both diseases. The extraordinary general similarity also of symptoms characterizing the different stages of Cholera, to those attending certain modifications of fever, could scarcely pass unobserved by any one who had opportunity, within the tropics, of becoming familiar with such affections; nor could the striking fact remain unheeded, that attacks of endemic Cholera happened, like intermittents, most commonly at the changes of the moon, and prevailed, along with these fevers, in the same locality. Such manifest resemblances could not fail in impressing the mind with a belief, that if the relation of these diseases be not constant, it at least arises from the same external atmospheric influences which change the human organism from a state of health to disease. So forcibly had facts brought this conviction to my mind, that in my Cholera reports, on the disease at Kaira, in 1819, addressed to Dr. S. Meek, then superintending surgeon of the Gujerat division, I pointed out the apparently intimate connexion of the two; stating, that several cases had come under my observation, where Cholera and intermittent fever alternated with each other. In 1820, when again reporting to Dr. Jukes, I brought to his notice, that the greater number of Cholera attacks among the prisoners in the jail of Kaira, happened at the lunar periods; and

how, in the middle of April of that year, the *karkoon*, or native revenue writer, of the town of Neriad, in the province of Gujerat, had reported, that for three or four days, about the period of the new moon, thirty or forty people were attacked daily by Cholera, and that, soon after, the number of attacks decreased to six or seven. In subsequent annual reports to medical authorities in India, particularly those of the European General Hospital, for the years 1838-39, I had occasion to repeat the same observations and opinion; and am now only anxious to record my having done so, as Dr. Chambers, in two admirable and luminous lectures on Cholera, delivered to the students at St. George's Hospital, and lately published in the *Lancet*, has proved with great ability the existence of a disease, prevalent in London about 1680, and the following years, identical with the Asiatic malady; and which had a common origin with epidemic febrile diseases, and others of an intermittent type, arising from miasmata, and ordinarily affecting the inhabitants of this city. The delineations of this disease, quoted by Dr. Chambers, are found in Dr. Morton's *Treatise on Fevers;* and both these, and the descriptions of Cholera, by medical authors of antiquity, must satisfy us of the truth, that the so-called Asiatic Cholera, which has of late years prevailed in Europe, was long previously known to practical observers, and cannot be dated as a new disease from the reputed epoch of its birth in 1817. More modern writers in India, as Paisley, Girdlestone, and Curtis, have recorded the prevalence of this disease, which broke out with great severity in 1695, while Aurangzeb's army was besieging Beejapoore. The Persian author, who records the circumstances as an eye-witness, states, "that amidst the calamities of a famine, which afflicted the country the previous year, a pestilential fever and diarrhœa attacked the people in camp; and by little and little spread through the whole with such fatality, that no one calculated on his existence for a single hour, and the bazaar transactions were only carried on for ready money."

But if both diseases appear so closely connected in their origin, they are not less intimately related to one another by their phenomena during life, than by their post-mortem appearances. Cholera, like fever, is not exclusively a disease of either the vascular or nervous system; and if the post-mortem vascular appearances of particular organs be not identical in both, they seem only to differ in degree. Those of Cholera are what we might expect to find in algide intermittent, terminating fatally soon after the accession of the cold stage, had we opportunities of tracing them; but those of fever are more of secondary result, following the reaction of the central vascular organs to remove injuries of the peripheral ones, by abnormal self-excitation of the blood, for the purpose of depuration, and restoration of the circulating fluid to health. It is only by viewing Cholera as allied to fever in its modifications, and progressive like it in its forms, that any well founded arrangement of symptoms can be made, or any rational method of treatment laid down, as applicable to its different stages. Such is the object of this paper; and without speculating on the origin and sources of the disease, I shall endeavour, for the present, to specify its modifications, and the most suitable system of treatment, founded on my own experience, and on that of others.

The following observations may be arranged under five heads, viz.—I. History of the disease, as observed at various times and places since 1818. II. Modifications; symptoms and stages considered collectively. III. Particular symptoms originating in the perverted functional action of individual organs. IV. Post mortem appearances and pathology. V. Treatment.

I. HISTORY OF THE DISEASE.

On my arrival at Bombay, the 2nd of August 1818, I was directed to do duty in the garrison of Tannah, under the then garrison-surgeon Dr. Jukes, whose excellent letter, descriptive of the Cholera as it appeared at that station, will be found in the well known Bombay Reports. I joined the garrison (then consisting of a wing of H.M. 89th, and of other European and native detachments), immediately after the advent there of the disease, on the 13th of August. It had travelled along the high-road of the Dekhan, from Nagpoor, Jaulnah, Aurungabad, Alunednagar, Seroor, and Poona, to Panwell,—a considerable village on the mainland, separated from Bombay by an arm of the sea. Between the latter and Bombay there is a constant communication, by means of boats, or by the more circuitous overland route of Tannah. On the 6th of August the disease broke out with great violence at Panwell; appeared at Bombay on the 9th or 10th; and at Tannah the 13th of the same month. Here, a naique, who had escorted the state prisoner Trimbuckjee Danglia from Seroor, was the first person attacked. By the 16th of the month, the disease at Tannah had become general, and as many as fifty or sixty deaths among the natives of the bazaar were reported daily. The epidemic continued to prevail both among Europeans and natives, and with greater or less violence, till the 19th of September, when it began to decline. From the time of its commencement to its disappearance, I carefully kept notes of the principal cases admitted into the hospital, or occurring among the natives of the bazaar and servants of the civil establishments; the modifications of the disease, the apparent utility or otherwise of remedies, and any peculiarity of symptoms, being in this manner minutely recorded. In the absence of such records, and of the leading characters of Cholera cases, whether of endemic or epidemic origin, we can seldom draw any accurate conclusions as to what may be the contingent, and what the constant conditions of the disease. Certainly, some of the peculiarities of the Cholera attacks then noted have not since come under my observation; and such differences may account for the greater utility of bloodletting at that time, and the greater confidence reposed in it as a remedy, either in India or in this country. These peculiarities and modifications of the epidemic Cholera of 1818, not being mentioned in Dr. Jukes' report, I will endeavour here briefly to detail them.

Most descriptions of the disease, as it appeared at that period, too exclusively appertain to its collapsed stage, when the blood and lungs have ceased to generate animal heat, and the powers of the secretory organs have almost completely failed. But before the occurrence of symptoms characterizing this well-marked period of the disease, there were premonitory ones of diarrhœa, with nervous depression and fits of transient excitement, accompanied by acute burning pain at the scro-

biculus cordis, a frequent irritable pulse, and somewhat augmented heat of skin. This first onset of the disease appeared both among Europeans and natives; and the blood drawn from either at this period, frequently threw up a thin sizy film. If nothing was done to arrest the progress of the attack, the burning paroxysmal pain at the stomach increased, and was followed by vomiting of white-coloured fluid; the diarrhœa became more urgent, and the alvine evacuations changed from a dirty yellow colour to that of rice water; the skin was cold, and covered with clammy perspiration; the pulse became more labouring and oppressed, accompanied by much vertigo, distressing languor, and craving thirst: the whole phenomena of this stage bearing a marked resemblance to those of congestive or asthenic remittent. Though the skin of many patients was cold and clammy to the touch, they nevertheless complained of being tormented with burning heat, and were affected by spasms of the extremities.

After these symptoms had existed for some time, without any appearance of reaction in the system, the pain at the scrobiculus cordis for the most part abated, or entirely ceased; the respiration became more oppressed; the arterial action more feeble; the skin corrugated and shrivelled; the eyes sunk in their sockets; the voice more feeble and scarcely audible; till at last, increasing coma and death terminated the patient's suffering. Such was the general mode of attack, and progress of the disease. Sometimes, however, the vomiting and pain at the pit of the stomach were the earliest symptoms, and were present for an hour or two before the purging commenced; at other times both vomiting and purging occurred without vertigo; and occasionally there was no pain of stomach complained of, unless when pressed by the hand, which created an inclination to vomit. The discharges from the stomach and bowels varied in appearance, being sometimes clear and serous; and at others, white and mucaginous, like rice-water. For the most part, the pulse was frequent, feeble, and irregular; but occasionally, it was excited and compressible, as in fever; and whenever this happened, there was less apparent determination to the head than usual. Total deafness was only present in one instance; and in another, the patient complained of a noise in his ears resembling rushing water. There were other symptoms which accompanied the several attacks, and which will be more fully enumerated when I come to consider the modifications and stages of the disease.

Such was its usual progress; but most of the patients were not brought for medical aid, until the stages of congestion and collapse had been fully developed. Generally, these stages ran their course progressively, and were sufficiently well marked; but sometimes, the earlier one of nervous depression was wanting, or so rapid in its transition to congestion and collapse, that its development was scarcely manifest ere it had passed into the final coma of the others. This form of Cholera has been not inappropriately named ganglionic apoplexy, being characterized by the following manner of attack. After some languor, and a little watery purging, having been present for six, eight, or more hours, the person attacked complains of severe burning pain at the pit of the stomach, accompanied by vertigo, and soon after falls down insensible; his respiration being feeble, his pulse oppressed, his

skin more or less cold, and his jaw spasmodically closed, though not so rigidly as to prevent their being opened by gentle force. This will be best illustrated by the following case. On the 26th of August, one of the revenue collector's peons went from his duty to dinner in apparently good health, excepting that in the morning he had been suffering from flatulency and pain at the stomach. While in the act of eating, he was seized with vertigo, and soon after fell down senseless, in which state he was carried to the house of the collector, where some ether and brandy were given to him. Dr. Jukes soon after saw him, and found his skin below the natural warmth, his respiration almost suspended, and his eyes fixed. A vein was opened in the left arm, which bled rather languidly; but as the vital action of the heart became a little renovated, another vein was opened in the right arm, from which the blood began to flow with considerable force. Soon after, the patient made several deep inspirations, his eyes regained their natural motion, and all the other organs seemed to resume their functions. About thirty ounces of blood were abstracted, fifteen grains of calomel were administered, and bottles of hot water applied to the feet and stomach. A copious perspiration speedily followed, and next day the patient was nearly well.

During the cold months, from the end of 1818 to that of February 1819, the Cholera disappeared, and little or no mention of it is made in the hospital reports. By this time, I had been removed from Tannah to Kaira, in Gujerat, and directed to do duty with a native regiment, the 2nd battalion 7th regiment of infantry. In the end of April, some sipahies belonging to a detachment of this regiment, stationed at Dubassa, were sent to the head-quarters at Kaira, where, soon after their arrival, several cases appeared, on the 4th of May, among the men of the regiment. At the same time, the men of the pioneer corps, stationed in the lines at Kuttenpoor, and in the immediate vicinity of the dragoon cantonment, were attacked by the disease, without having had any communication with the affected sipahies from Dubassa. The cases admitted were of a highly congestive character, running rapidly into fatal collapse, which seldom admitted of the abstraction of blood from the veins, even when the patients were in the hottest bath that could be borne; so that if a small quantity of blood were obtainable in this manner, it only hastened the fatal result. Opiates also seemed to increase the desire to sleep, and tendency to collapse. Nearly two-thirds of the cases admitted proved fatal: and many of them within five hours from the period of the attack. In all the severer cases there was a remarkable absence of the paroxysmal pain at the scrobiculus cordis, which distinguished the Cholera attacks of 1818. Most of the deaths happened among the pioneers, who not only occupied an unfavourable locality on the dragoon side of the river, but were greatly predisposed to Cholera affection, by the contingent causes of poor living and mental depression. The supernumeraries of the pioneer corps, to whom the urgency of military service in Cutch had given temporary employment during the cold weather, were brought down to Kaira for discharge, and were those who suffered most. They had no huts to shield them from the weather, and were continually exposed to the heat of the sun by day, and to the land wind by night. They were, with very few exceptions, Hindoos; who, from their abstemious and even penurious habits, are

well known to live on the cheapest food, of inferior nutritious qualities. Such habits, by predisposing the body to the unhealthy influences of other exterior conditions, particularly cold bathing after hard work, and in an excited state of the cuticular capillaries, seem to have borne no inconsiderable share in producing a disease of great malignity. The disease continued to prevail at Kaira, and in many of the neighbouring towns, throughout the hot weather, and disappeared, for a time, after the setting in of the rainy season in the middle of June.

In the succeeding year, 1820, it reappeared about the beginning of March, after having been prevalent for some time in the neighbouring villages of Nereiad, Mahmudabad, and Mandwa. The disease had travelled, as would appear, from Surat to Baroda, and thence to Kaira; having broken out at the former place some time about the end of December 1819, or beginning of January 1820. It made its first appearance there in Chilli Bey's dock-ship, and in the native lines, where the 2nd battalion 3rd regiment of native infantry was then stationed; attacked the men of this battalion, and prevailed also among the prisoners in jail. This regiment, soon after the appearance of the disease in Surat, marched for Baroda, and was severely attacked by it at the second halting-ground. It continued to affect the men of the battalion, but in a milder degree, along the whole line of march, and afflicted them more severely on their arrival at Baroda, where between fifty and sixty died out of a hundred cases. Some account of its prevalence at this station may be found in Dr. Kennedy's work on Cholera. It did not finally cease to prevail in the 3rd native infantry, till the regiment marched from the station and joined Colonel Barclay's force, then employed on the banks of the Run, where not a case occurred during all the hot weather, though the troops were kept constantly marching. On the 3rd native infantry going into Bhooj, in Cutch, about the middle of June, while the Cholera was raging there, it again severely suffered from the disease, which carried off Mr. Colegate, the assistant-surgeon of the regiment.

From this time, Cholera continued prevalent, at short intervals, in different parts of India; but as I had no opportunity of seeing any great number of cases till 1838, I kept no notes on the subject. While employed at this time, as surgeon of the European General Hospital, at Bombay, I admitted twelve cases of the disease in the months of July and November. Three of these proved fatal. All the attacks in July commenced with diarrhœa; which, after continuing several days, was followed by vomiting, coldness of the skin, collapse of countenance, and sinking of the circulation, as marked by a frequent feeble pulse. The gastro-enteritic affections seemed to be only modifications of the same disease; being characterized by pain at the epigastrium, diarrhœa, and sometimes vomiting, accompanied by a feeble pulse and vertigo, which increased as the purging diminished. The Cholera admissions for November happened at the time of the new moon; when the dew was falling, and the weather had become cold. Some cases of intermittent fever occurred at the same time. The sister of one of the Cholera patients who died, had irregular febrile symptoms; and the mother of both these, on being attacked by Cholera, also died in the beginning of the next month.

In 1839, thirty-three cases of Cholera were admitted, fifteen of which proved fatal, being 45.4 per cent. of deaths. The greater number of casualties happened during May; Cholera at this time being prevalent amongst the seamen of the ships in harbour. The men attacked on shipboard were generally sent to hospital in the last stage of the disease, and under most disadvantageous circumstances; having been exposed during the day to the influence of a burning sun, and at night to the land wind. Many of the admissions were of children born in the country, who had lost all pulse, and were in the last stage of collapse. Some of the successful cases were of the bilious kind, or of "hepatic erethism", marked by epigastric tenderness, and cramp of the abdominal muscles. The two diseases, "Bilious Cholera" and "Algide Cholera", are the same morbid states, differing only in degree: the former consisting of ganglionic irritation, and increased hepatic secretion, as the consequence of imperfect decarbonization of the blood; the latter of ganglionic and cerebro-spinal congestion, with endosmotic sero-mucous exhalation from the intestines, the result of impaired vitality of the blood.

I had no further opportunity of observing cases of Cholera, or of ascertaining the progress of the disease, till my removal from Bombay to Belgaum, as superintending-surgeon of the southern division. The troops serving in this division belonged to the Madras presidency; and almost every regiment which, during the years 1841 and 1842, had occasion to change stations, and to march along the extensive plain of deep black alluvial soil, from Kolapoor northwards to Bellary southwards, experienced severe loss in its ranks and among its followers, from Cholera, which was extensively prevalent, during these years, among the villages and in the districts included in the collectorates of Kolapoor, Belgaum, and Dharwar.

In the beginning of the former year, it broke out among the pilgrims assembled at Kolapoor, to celebrate the religious festival of "Kadar Ling-deo"; and from them spread, in February and March, into the neighbouring districts of Padshapoor, Uthnee, and Gokauk; having soon after become general in the collectorates already mentioned. In May 1841, the disease appeared with great severity at Kolapoor, among the troopers of the 5th Madras cavalry; the medical officer of the regiment deeming that its outbreak was, in part, connected with the filthiness and ill-ventilated state of the native huts in the cavalry lines. The progress of the disease indeed may have been connected with these causes; but long before its appearance in the lines at Kolapoor, it had been prevalent in the villages of the neighbouring districts, manifesting, in its progress from place to place, that it attaches itself to masses of the people assembled for the purpose of celebrating religious festivals, and can in this way be disseminated from person to person.

Whoever will take the trouble of investigating the information on this point, embodied in Table I (*see next page*), and will, by referring to a map of the country, trace the outbreak of the disease, and its progress from place to place, must, I think, be convinced of this fact, that Cholera of endemic origin, under a community of habits, and of atmospheric conditions, can become transmissible from locality to locality, and from the sick to the healthy, who breathe the same atmosphere in ill-ventilated apartments. Such is the fact, however, and one practically known in

TABLE I.—NUMBER OF PERSONS ATTACKED BY CHOLERA, AND OF THOSE RECOVERED AND DECEASED, WITH AND WITHOUT RECEIVING THE AID OF MEDICINE.

No.	Names of the Talooks.	Population.	Period the disease continued.	No. of persons attack'd	Received aid of medicine.			Received no aid of medicine.			Number attacked.			Remarks.
					Rec.	Died	Totl.	Recov.	Died.	Total.	Recov.	Died.	Total.	
1	Sumpgaon	59,329	April to Sept.	1,362	35	26	61	386	915	1,301	421	941	1,362	The disease commenced in Wuckoond, E. of Sumpgaon, and amongst travellers from Kulludghee.
2	Beedee	82,164	April to July	702	7	8	15	201	486	687	208	494	702	The disease commenced in Nichundee, E. of Beedee, and amongst the people who returned from the Jatra at Yellama.
3	Padshapoor	46,711	Jan. to Aug.	522	93	94	187	79	256	335	172	350	522	The disease spread into this Talooka, from the people who returned from the Jatra at Yellama and Kadar Lingdeo.
4	Chickoree	75,064	April to June	1,282	33	68	101	323	858	1,181	356	926	1,282	The people who went to the Jatra of Kadar Lingdeo, brought the disease into this Talooka.
5	Bagulkote	53,407	April to July	2,715	15	21	36	744	1,935	2,679	759	1,956	2,715	The disease commenced at Hippergee Zillah Kolapoor. At Kolapoor the disease first made its appearance in May 1841.
6	Badamee	56,039	April to July	1,557	48	79	127	336	1,094	1,430	484	1,173	1,557	The villagers of Mootulgherree went southward in search of labour; on their return they were attacked by the disease.
7	Uthnee	33,821	Mar. to June	1,816	102	130	232	534	1,050	1,584	636	1,180	1,816	The disease first broke out in Kabundkee, E. of Uthnee, and spread into the whole Talooka. In Uthnee alone, 681 persons were seized with Cholera during April.
8	Gokak	48,310	April to June	1,306	27	73	100	288	918	1,206	315	991	1,306	Disease broke out amongst the villagers of Chicknundee, from thence it spread into the Talooka. At Kolapoor about 1000 persons died in three weeks in April and May.
9	Pursghur	45,534	April to Sept.	900	46	65	111	204	585	789	250	650	900	The villagers of Bailsoor were first attacked; from thence it spread into the Talooka.
10	Hoongoond	50,649	May to June	827	0	5	5	241	581	822	241	586	827	The villagers of Somlapoor and Koodeehall were first attacked.
	Total	551,628		12,989	406	569	975	3,336	8,678	12,014	3,742	9,247	12,989	

BELGAUM, 31st December, 1842.

India, that, whenever a native regiment, attacked by Cholera on the march, is allowed, immediately after arrival at a new station, to occupy the regimental lines of native huts, its men and followers continue to suffer for a long time from the disease. It is therefore usual to encamp the infected regiment outside the cantonment, in some dry and healthy locality; and not to allow the men to occupy their huts till all traces of the disease have disappeared. Such precautions are, I think, attended with the best possible results in preventing the spread of Cholera: and even where encampments of men have been attacked by it on the deep black alluvial soil, a change of position to the hard, dry, and ferruginous laterite formation, in the immediate neighbourhood, appeared to be followed by equally happy results.

The Cholera was again prevalent in 1842, and raged at the same time in Bombay, as may be seen by reference to Table II. It increased gradually from the beginning of the year till the hot, humid months of May and June, when the disease reached its climax. The influence of a moist and hot atmosphere in diminishing the cutaneous exhalation, and increasing the absorbent function of the skin, seems favourable to the operation of malarious causes; to which, and the negatively electric state of the atmosphere, many of the endemic attacks of Cholera, which annually occur in these months, are clearly traceable. It was in this same year, I think, that the 23rd Madras native infantry, on its march to Dharwar, was severely attacked by the disease on the banks of the Toombhoodra river, and lost several of its European officers. But enough has been already related relative to the history of the disease, and in illustration of the circumstances and conditions of the *endemico-epidemic* causes, which render it prevalent.

TABLE II.—Statement showing the number of persons reported to have died of Cholera, and of those who received Government medicines, with the result, in the island of Bombay (estimated population, 235,000), from 7th February to 31st December 1842.

Months.	Recovered.	Died	Result unknown.	Total.	Total reported to have died.
February	—	—	—	—	2
March	—	—	—	—	100
April	—	—	—	—	142
May	—	—	—	—	2,391
June	—	—	—	—	851
July	—	—	—	—	292
August	—	—	—	—	283
September	—	—	—	—	264
October	—	—	—	—	128
November	547	161	—	708	740
December	2,144	390	27	2,561	913
Total..	2,691	551	27	3,269	6,106

(To be continued.)

CASE OF A TUBE IMPACTED IN THE LACHRYMAL DUCT FOR NEARLY NINE YEARS.

By W. WHITE COOPER, Esq., F.R.C.S., Senior Surgeon to the North London Infirmary for Diseases of the Eye, etc.

A LADY, sixty-one years of age, consulted me in March 1847. She stated that, nine years previously, whilst in France, she was attacked with inflammation of the right lachrymal duct, and an abscess formed, which was opened; after a time the wound healed, but left the passage impervious. The duct was therefore pierced with a trochar, and a gold tube introduced by a French oculist. The operation was attended with considerable suffering from the size of the tube, which required much force to place it in position; irritation followed, but gradually subsided under the use of fomentations. The skin healed over the tube, and for nearly six years it answered well; but at the expiration of that time, the patient became annoyed by deep-seated pain in the region of the duct, and an offensive discharge from the right nostril. After these symptoms had existed six months, an abscess formed and burst externally; the wound did not heal, but constantly gave exit to an abundant fœtid discharge, which also flowed from the nostril. An eminent oculist at Paris was consulted, who examined the parts, and arrived at the conclusion that the tube was no longer in the duct, and that the symptoms arose from necrosis of the bone. He recommended frequent syringing with an infusion of walnut leaves, and introduced a silver style into the duct. The discharge, however, continued, and an unhealthy, unsightly sore formed at the corner of the eye, which after a time caused partial eversion of the lower lid. For three years this continued, rendering her extremely miserable, for the discharge was so offensive that she was quite debarred from society. During this time she consulted two gentlemen of eminence in London, who coincided in opinion with the Parisian oculist, that the tube had escaped from the duct.

On examination, a puckered granulating sore, about the size of a fourpenny piece, marked the situation of the orifice; a fine probe passed with facility into the nose, and in its passage struck against a hard substance which had been considered as denuded bone. From no pain or sensation being excited by the strokes of the probe, I was inclined to the belief that the substance was metallic, and that the tube was in the duct as asserted by the patient, although I could not, with the utmost care, discover its edge.

The granulations bleeding profusely, and the patient becoming excited, further proceedings were deferred until the following day.

The duct was then cut down upon, and on the wound being dilated, the edge of the tube was clearly seen at the depth of full a quarter of an inch; with some difficulty it was grasped with a pair of strong forceps, but nearly as much force as I was capable of exerting was required to pull it out, so firmly was it impacted. Considerable hæmorrhage followed, but was arrested by cold water and the injection of a solution of alum. The patient was directed to syringe the duct thrice daily with a solution of hypochlorite of soda, and, after four days, the

offensive discharge had entirely ceased. On the fifth day a small style was introduced, and at the expiration of a fortnight the sore had healed; a slight eversion of the lid, with a puckered indentation, only remaining to indicate its situation.

Remarks. Heister was, I believe, the first who proposed to cure fistula lachrymalis by the introduction of a canula into the nasal duct; his plan was to perforate the os unguis, place the canula in position, and allow the skin to heal over it. This proceeding was unnecessarily severe, but a great improvement upon the barbarous surgery of his predecessors. Upon it, Mr. Wathen again improved, by inserting the canula into the duct without injuring the bone; at first the prospects of success were most flattering, but, after a time, the plan was found open to many objections. The tubes shifted their position in the canal, sometimes rising too high, at other times sinking too low. A modification of the form of the tubes was proposed by M. Pellier, a French oculist, but experience proved them to have equal disadvantages with the originals, consequently the persistent tubes were generally abandoned in this country for the style, which, whilst it permits the passage of the tears by its side, is smaller than the canula, creates less irritation, and can be withdrawn and replaced with facility, a proceeding which ought never to be neglected beyond a week; it is better, indeed, to remove it every fourth day, to syringe the duct with a weak solution of alum, or if there be offensive discharge, with diluted liquor sodæ chlorinatæ—one part to fifteen of water—to wash the style and replace it. The surgeon should explain how this is to be done, and a little practice will enable any patient to manage it with facility.

On the continent, the old plan of the canula was extensively used by Dupuytren, and is still adhered to by some foreign oculists. The case above related offers a fair example of the consequences to be expected from its use. For a time all goes on smoothly enough, and the patient is flattered with hopes of a perfect cure; but, sooner or later, irritation is set up, and unless the tube be removed, it becomes buried in granulations, is firmly impacted in the canal, and caries of the bones forming its boundaries, with all the attendant miseries, will be the probable result.

It is very important, when consulted by a patient labouring under obstruction of the lachrymal duct, to ascertain the condition of the mucous membrane of the nostril. This, especially in strumous subjects, will often be found thickened, congested, and ulcerated. The obstruction to the passage of the tears may, in such a case, arise either from the closure of the lower orifice from this condition of the schneiderian membrane, or from the extension of the morbid changes into the duct itself. Under these circumstances, much benefit will be derived from the use of an ointment composed of three parts of the unguentum hydrargyri ammonio-chloridi, to one part of oil of almonds. This should be applied with a camel hair brush, and well swept over the membrane of the nostril. A lotion of four grains of nitrate of silver to an ounce of distilled water, applied in the same manner, is also frequently of great service. But with such measures, careful attention to the general health should be combined.

On several occasions I have seen much embarrassment caused during

the operation for fistula lachrymalis, by the difficulty of finding the orifice of the duct with a probe or style, after the sac has been opened and the knife withdrawn. This will be obviated by making the incision with a narrow-bladed knife, which should be passed into the mouth of the duct; a fine probe should then be slid along the blade into the duct, and the knife withdrawn. The probe will at once guide the style into the duct, and the operation be completed.

ON THE DISCUSSION RESPECTING CHLOROFORM, IN THE ACADÉMIE DE MÉDECINE OF PARIS.

By JOHN SNOW, M.D.

THE original conclusions arrived at by the Commission appointed to investigate the fatal case at Boulogne, and the general question of the safety or danger of chloroform, were ultimately adopted by the Academy, with very slight alteration (as was shown in the abstract of the proceedings in the last number of this JOURNAL), but not till they had met with a very stout opposition, more particularly from MM. Blandin and Jules Guérin. With the first conclusion, which acquits chloroform of the death of M. Gorré's patient, I cannot agree, any more than these gentlemen, and a number of other speakers. The Commission commenced their investigation, with the assertion that chloroform always produces intoxication and insensibility before death; and their reporter, M. Malgaigne, adheres to their opinion to the end, in opposition to all contrary evidence, and even denies that chloroform can cause death by its direct action, and especially by poisoning.

Now the truth is, that the vapour, when inhaled of a certain strength, is just as sure to cause sudden death without premonitory intoxication or insensibility, as it is to cause its ordinary beneficial effect when inhaled of another strength, or to fail altogether of its desired action, if diluted beyond a certain point. I have several times made animals—small birds, mice, and rabbits—breathe air saturated with vapour of chloroform at the ordinary temperature of the atmosphere, and the consequence has always been, that after attempting for a few seconds to escape from the capacious jar in which they were inclosed, they suddenly exhibited signs of distress, and died without any interval of intoxication or insensibility, in periods varying from less than half a minute to a minute after their first exposure to the vapour. In these experiments, not more than one-sixth part of the air was displaced by the vapour diffused through the remainder. The vapour of chloroform never acts, as supposed by the Commission, by excluding the air, and so producing asphyxia. This is physically impossible. The same quantity of vapour of ether in the air causes a much slighter effect; and, of some vapours, a scarcely appreciable influence, even when the air is quite saturated with them. Chloroform acts by its narcotic properties alone; and when inhaled of the strength employed in the above experiments, it paralyzes the action of the heart at the same time as the respiratory movements.

In two experiments of this nature previously related,[1] I found the blood in the lungs still florid, immediately after death.

In the case at Boulogne, artificial respiration was performed for upwards of an hour after death, and with force enough to cause permanent dilatation of the air cells. At the subsequent inspection of the body, air was found in the pulmonary veins, in the heart, in the right carotid artery, and in the veins generally; a little frothy blood being found at the orifice of the vena cava. The conclusion of the report which has been adapted by the Academy, is, that death was probably caused by this mixture of gas with the blood. The report does just notice the idea that the air might have entered during the artificial respiration, but adds that this would not explain the cause of death, having prejudged, that it was not the narcotic action of the chloroform; and goes on to state that the froth at the orifice of the vena cava proves that the air entered during life, entirely overlooking the fact (and I do not see it alluded to by any of the speakers), that the froth would be produced by the churning of the blood backwards and forwards in the large vessels, during the artificial respiration which had introduced the air. The Commission suppose that the air or gas was suddenly developed in the vessels by some unknown cause, and curiously the speakers who oppose their conclusion, admit this sudden evolution of gas, but attribute it to the chloroform—to a peculiar action of ether on the blood. This is the weak point in their argument, for M. Malgaigne justly replies that this is only hypothesis.

One fact of importance has been brought to light by this inquiry. In the report previously published, it was stated that not more than from fifteen to twenty drops of chloroform had been employed; but by a judicial examination of what was left in the bottle, it was found that from five to eight grammes had been used—from 77 to 123 grains, or from one to two tea-spoonfuls, a quantity amply sufficient to cause death.

After thus treating the special case submitted to them, it is not surprising, that the conclusions of the Commission on the general question are vague and unsatisfactory. Part of them are commonplace remarks in which everybody agrees; but in what danger really consists, and how it is to be avoided, is nowhere pointed out. They state: "there is risk of asphyxia when the anæsthetic vapour is not sufficiently mixed with air." The risk is not one of asphyxia, but of over-narcotism, which, according to circumstances, may cause death by paralyzing the respiratory movements, and so bear a certain resemblance to asphyxia, or may arrest the action of the heart, and so resemble syncope. They lay down, as a rule: "To take care, during inhalation, that a sufficient quantity of air be mixed with the chloroform, and that respiration be entirely free"; but they do not state what is a sufficient quantity of air; whether 75 parts air to 25 vapour is sufficient, or whether it should be 95 parts air to 5 of vapour, we are left entirely in the dark. The truth is, it ought to be somewhere about the latter quantity, and the vapour cannot ever be breathed with safety in larger proportion

[1] Medical Gazette, October 13, 1848.

than 10 parts by measure to 90 of air. The conclusion of the Commission means no more than that there should be sufficient air for the purposes of respiration, and this is a fatal mistake—I say fatal, for there has been a death from chloroform in France, since the adoption of the report by the Academy. It occurred in a public hospital, and would, in all probability, have been prevented, by a different line of conclusions on the part of that learned body. The chloroform in this case was applied on lint, which was placed loosely over the mouth and nostrils. There was no impediment to free respiration, but the man suddenly expired, as in the previously recorded cases; and so long as so powerful an agent as this is given with no better means of regulating its strength than a handkerchief or sponge, such melancholy cases cannot fail, now and then, to happen. Many patients, who have not suffered, have narrowly escaped; several cases of syncope from chloroform were mentioned in the late discussion, and they have frequently occurred in this country under the use of the handkerchief, although it is no part of the action of chloroform, when carefully given, to cause syncope. The pulse may become small on account of struggling or altered breathing; and when sickness follows the inhalation, there is often a degree of depression attending it, but never sudden fainting, which, if caused by the vapour, must depend on a near approach to paralysis of the heart.

The last recommendation of the Academy is judicious enough, "to suspend the inhalation as soon as insensibility is procured", etc., but unless there be some means of regulating the strength of the vapour, there may be a dangerous increase of the narcotism after the inhalation is suspended, owing to absorption of a large quantity of vapour that may be present in the lungs at the moment, and which will take about twenty seconds to get absorbed and reach the brain; thus accumulating the effect during that period.

M. Roux remarked, that if he supposed it necessary to take all the precautions recommended by some surgeons, he would for ever renounce the use of chloroform. I would reply, that those who are not willing to take very great precautions in using this powerful medicine, should employ ether, in the use of which, danger can be avoided by only moderate precaution, as it cannot act so swiftly as not to give due warning.

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NOTE ON THE DIGITI SEMI-MORTUI.

By MARSHALL HALL, M.D., F.R.S.

I AM frequently consulted in cases, in which one or more fingers lose their sensibility, their colour, and their temperature for a time. The appearance is that of death, and I have therefore designated these fingers "*digiti semi-mortui.*"

In one case, witnessed this morning, a thermometer applied to the middle finger, which was *semi-mortuus*, denoted a temperature of 61° Fahr.; applied to the fore-finger and the ring-finger, it rose to 81°; the difference being 20° of temperature. I think, that if the finger in this state were pricked with a needle, there would be little or no pain, or flow of blood; but I have not yet tried the experiment. External cold produces this affection; warmth and rubbing remove it. When the patient has been once subjected to it, it is very apt to return. It occurs in middle, as well as in old age. What is its precise nature, cause, and effect?

I am about to have a drawing taken of a finger or fingers so affected, and to gather a few instances together for the LONDON JOURNAL OF MEDICINE. I mentioned the subject at the Harveian Society, on Thursday evening last, the 15th instant, but the fact seemed to have been noticed but by few of the members present.

Manchester Square, London, Feb. 17, 1849.

BIBLIOGRAPHICAL RECORD.

THOUGHTS ON PULMONARY CONSUMPTION; with an Appendix on the Climate of Torquay. By WILLIAM HERRIES MADDEN, M.D., Physician to the Torbay Infirmary and Dispensary, Author of a Prize Essay on Cutaneous Absorption, etc. pp. 219. London: 1849.

DR. MADDEN'S THOUGHTS ON PULMONARY CONSUMPTION are not intended as a systematic treatise on phthisis; nor is the work, like too many monographs on the same subject, an idle attempt to set forth some empirical views relating to the disease, or to some remedy supposed to act on it in a manner to which no others can lay claim. On the contrary, it is the product of a mind, sensible alike to the value of carefully observed facts, and of philosophical reasoning. The main object which the author has proposed to himself, is to elucidate the *true substantive nature* of phthisis, "by a comprehensive view of the phenomena presented by the disease itself, and by the diathesis which precedes its manifestation, attempting to form a consistent picture of the whole, to show by what links the separate parts are connected, and to demonstrate *why* the results are what our investigations prove them to be."

The work is divided into two parts: the first treats of the Chemistry, Histology, and Physiology of Tubercle; the second, of the Manifested Disease.

In the first part, the first section contains an excellent sketch of the subject, and of the manner in which our investigations should be carried on. It is not by a mere empirical attention to symptoms, nor by a theoretical acquaintance with the *essence* of a disease, founded on the appearances seen in the dead subject, that we are to expect to arrive at any correct conclusions respecting its nature or treatment. Too exclusive an attention to symptoms, or to post-mortem appearances, tend to lead, the former to empiricism, the latter to hasty conclusions, by which many have been arrested in their inquiries after truth. Neither of these must be neglected; but "if we would arrive at a true acquaintance with the morbid processes, we must go much further than this. We must investigate causes: we must inquire into the vital forces which are brought into play for the production of the results we witness: and, when new substances are formed,—in other words, when there are morbid deposits,—we must ascertain, as far as may be, the intimate structure, the true essential nature of these abnormal entities. And then, combining in one general view our reasonings and our discoveries, we must seek to form a connected and consistent picture of the whole; and, remembering always that we have to deal with a living and most complicated organism, must study to apply such remedies as will meet the various exigencies of the case; subduing inordinate action, stimulating that which is defective, and altering that which is unhealthy or perverted." (pp. 3 and 4.) Such a combination of observation with rationalism, as is here recommended, will alone serve to bring medical science to an approach to perfection. Rationalism has been assailed with ridicule, because being, comparatively speaking, in its infancy, some of its over-zealous followers have proposed views which have not stood the test of experience, and have been successively compelled to give place to others, some of them not less ill-founded. It has been accused of a *petitio principii*, of assuming more than has been proved; of torturing discoveries in chemistry, or in physics, or in physiology, into seeming applicability to pathology, and thus preventing real progress in art, and perpetuating its uncertainty, by creating a constant change of *à priori* notions, aimless, endless, resultless. There is ground for such a charge, only so far as rationalism has not been joined with observation. The theories of Cullen, of Brown, of Rasori, of Broussais, have fallen, because they were not founded on correct data; but has this

been the case with *all* rational doctrines! And is this error, or the often hasty conclusions drawn from the effect of poisons introduced into the blood, with respect to the action of the same materials when taken into the alimentary canal, or from any analogous experiments, to be made the grounds of an attack on every thing which does not bear the stamp of observation—in other words, of empiricism—and nothing else? The devotees of observation err, in assuming that medicine is an *art;* it is, moreover, a *science*, on which, perhaps more than on any other, the reasoning faculties of the mind can be, as they are doubtless intended to be, most extensively exercised. We do not wish to uphold rationalism at the expense of observation, for we should then be guilty of desiring to retard the progress of medical art; but we must express our conviction, that an exclusive attention to numerical facts tends very greatly to retard the progress of medical science, and to prevent the formation of a sound system of pathology. Both must be duly combined; and then only can we hope that medical art, and medical science, can make any progress. And, in the disease under consideration, such a combination is pre-eminently necessary.

Section II treats of the CHEMISTRY OF TUBERCLE. From the analyses of tubercular matter by Preuss, Simon, etc., it is found to contain casein, indicating defective elaboration. Pyin has also been detected; and the presence of this matter would seem to indicate the existence of a certain amount of inflammation, or abnormal increase of oxidized protein in the lungs. Dr. Madden, with Simon, regards the extractive matters found in tubercle, as products of the nutrition and waste of the different tissues. Their presence in tubercle may be explained in two ways: either that the healthy process of renal excretion, by which they are thrown off in the normal state, is defective, or that they are merely the result of the waste of tissues, and indicate, by their preponderance, the undue activity of the decomposing process. This latter view appears more correct, when considered in conjunction with the fatty nature of the tubercular deposit; for the fatty transformation of organs is evidently a process of degeneration.

Section III treats of the HISTOLOGY OF TUBERCLE, and contains the result of microscopic examinations made by Dr. Madden. He has not been able, with a magnifying power of 470 diameters, to detect any distinct appearance of nuclei in the cells of tubercle; and he does not think that they exist. In the stage of softening, Dr. Bennett considers the tubercular matter sometimes wholly composed of granules or molecules. Dr. Madden has generally found a number of free oil globules, and some crystals of cholesterin. He adopts the view of Lebert and Addison, that the usual seat of tubercle in the lungs is in the intervesicular areolar tissue; but in some cases they are deposited in the air-cells, or in the capillary bronchi. He has in vain sought for the terminating vesicles filled with yellow tubercles, as described by Dr. Carswell. In advanced stages of the disease, all the textures of the lung appear to be implicated.

The essential characteristic of tubercular deposit consists in its peculiar corpuscles, which the author regards as bodies *sui generis*. They are not, as Dr. Addison has supposed, abnormal epithelial cells; for the latter are nucleated, while tubercle-corpuscles are devoid of nuclei. This want of nuclei serves also to distinguish them from pus-corpuscles, and from the large transparent cancer-cells. That tubercle-corpuscles may be *analogous* with all these, there can be no doubt, in so far as they each give evidence of a diseased state of nutrition; but that they are *identical*, is by no means probable. Dr. Madden thinks that tubercular deposits are the uniform result of the operation of one special cause. We find a tubercular lymphatic gland, after having inflamed and suppurated, resisting all our attempts to heal it; we also find leech-bites producing incurable ulcerations over the skin of a malignant tumour. Again, a patient with tubercular disease of a joint, after it has been removed, dies of pulmonary consumption; and an analogous trans-

ference of the disease to some internal organ occurs, when a limb is removed for a carcinomatous tumour. Why should we deny a specific property in tubercular matter, any more than in cancer, and refuse to admit that their action is analogous? The argument, then, is, that "the fountain of the two diseases is alike a vitiation of the blood, and the phenomena presented by both are what they are, simply because the morbid elements have a certain determinate and altogether specific character; or, to speak with more correctness, because the vitiation on which they depend, is, in each, peculiar and distinct from all other morbid changes."

Section IV contains an account of the STATE OF THE BLOOD in Phthisis. The analyses of Simon, Andral and Gavarret, and Becquerel and Rodier, shew that there is an increase of fibrin, with a diminution of the amount of red corpuscles: the former being sometimes in the proportion of 6.5 to 1000, that of healthy blood being 2.104 (Simon). Dr. Glover very correctly remarks, in his admirable "Essay on Scrofula," p. 117, that "analyses of the blood in phthisis are obviously much less instructive of the real character of the alteration, which takes place in this fluid, than are those which can be made in scrofula, or mere external tubercle, on account of the great debility and cachexia, arising from obstruction of the more important functions, present in the internal scrofulous diseases." The results, however, of his investigations into the blood, in external tuberculosis, correspond very closely with the results above stated.

Section V treats of the STATE OF NUTRITION. It is evident that we must correctly understand the nature of healthy nutrition, before we can have any scientific appreciation of the nature of tubercular consumption. Dr. Madden passes briefly in review the selection of material from the food, the formation of chyle, its absorption by the lacteals, its properties, and the change it undergoes in its course. The gradual conversion of albumen into fibrin he considers may be brought about by the communication of a higher degree of vitality, from the influence of the living solids with which it is in contact. But to account for the almost entire disappearance of the oil, something more is necessary; nitrogen must be communicated to the non-azotized substance, to convert it into albumen: and this is supposed by Dr. Madden to be derived from the vasa vasorum of the lymphatics, but chiefly from the blood vessels of the glands. He considers this idea supported by the fact, that the secretion of the liver, which is mainly formed from blood which has returned from these vessels, consists almost entirely of unazotized ingredients. Dr. Madden then takes into consideration the changes produced in the blood, the exudation of blastema from the blood-vessels, and its assimilation by the living structures into which it is poured out. He also offers some remarks on inflammation, and adopts the views of Dr. Williams as to the cause of the rapid generation of the colourless corpuscles. The views of Dr. Addison, that the colourless corpuscles pass bodily through the walls of the blood-vessels, and constitute plastic lymph, or pus, he considers doubtful; but thinks it more probable, that these adhere to the walls of the capillary vessels, and burst, so that their contents are poured out. He concludes that inflammation is nothing more than an "abnormal modification of ordinary nutritive actions." The *method* observed in the nutrition of the body is simple; but the *machinery* is complicated: and an error in one point must necessarily be propagated to all the rest. The account of scrofula, given by Mr. Phillips, indicates a fundamental error in the great process of nutrition; and can any light be thrown on the *cause* of this? Dr. Madden refers the coldness and pallor of the surface, the defective muscular energy, the sluggishness of the brain, to the diminution in the amount of red corpuscles, and the consequent insufficiency of oxygen. Moreover, "the blood-liquor does not undergo the full extent of vitalization; and, therefore, though the fibrin it contains be increased in absolute quantity, it is of less value, from its low plasticity; the defect of oxygen necessarily reduces it, more or less, from

the condition of arterial towards that of venous blood. Hence, the structures formed are imperfect; and hence, when this state of things has gone on for a considerable time, and the consequent derangements have become more serious and more persistent, we have the deposit of the caco-plastic or aplastic tubercle, in the place of healthy tissue. It is no little confirmation of the accuracy of these views, that the chemical characteristics of tubercle are precisely in accordance with them. Their protein basis is albuminous,—in part, according to many chemists, caseous,—and they are signalised by the increased proportions of fatty and extractive matters." (pp. 48, 49.) The presence of pyin, or tritoxide of protein, in tubercle, is apparently opposed to the theory of defective oxygenation. But this is capable of explanation, by supposing that the oxygen introduced into the lungs, from want of red corpuscles to convey it through the system, acts on the matter which it finds there, and converts it in part into pyin; or it may be the result of inflammation in the living solids around.

We have, then, "sufficient evidence to demonstrate that the particular substance, tubercle, is the result of abnormal nutrition: that it is the necessary consequence of a *peculiar* modification of those processes by which the living body is maintained in integrity, and by which its several parts grow and increase. I say *peculiar*, because it is clear that *all* malnutrition does not give rise to the production of tubercle; otherwise, every one affected with severe or prolonged dyspepsia would inevitably become tuberculous, which we know is not the case. It is a special disease, and owns a special parentage". (p. 52.)

Mr. Paget has endeavoured to shew, that each organic part of the healthy body, when first deposited, is an *excretion*, the removal of which fits the blood for the construction of other tissues. It appears to Dr. Madden, that this explains the very early occurrence of emaciation in cases of phthisis pulmonalis. For the separation of the *imperfect* matter, tubercle, from the blood, must of necessity render the remainder of that fluid more or less unfit for nutrition; it retains what it should have lost, or has parted with more than it should have given up; it is not healthy, and cannot act with healthy energy. These remarks apply especially to the gradual and insidious form of phthisis, not being the sequel of pre-existing disease. It is probably also an essential part of the process in cases preceded by pneumonia, or catarrhs, or a subsidence of exanthematous eruption, although the emaciation may be dependent on other causes also.

Section VI contains some very powerful arguments in favour of the IDENTITY OF TUBERCULAR AND SCROFULOUS DISEASES. The opposite view has been supported by several writers of note, and especially by MR. PHILLIPS, in his recent work on *Scrofula and its Treatment*. He acknowledges that there are no appreciable chemical or physical differences between tubercular and scrofulous matter, but lays little stress on this fact. Dr. Madden regards it as all-important, and considers that there are good *à priori* grounds for the opinion, that both prove the existence of the same disease; that both, being similar effects, should be attributed to the same cause. Mr. Phillips argues, that scrofulous disease of the subcutaneous glands is always preceded by inflammation, while tubercle is generally formed in the lungs without any such preliminary proceeding. But neither in the case of scrofulous glands, nor when tubercle is developed by pneumonia, can inflammation alone produce the results which we observe; there must be a predisposition. The facts stated by Mr. Phillips only prove, that the more active organ—the lung—does not require an additional stimulus to cause it to take on diseased action; while, in the gland, there must be an exalted and perverted nutrition, to which we give the name of inflammation. The fancied difference in the vascularity of the two products is not insisted on by Mr. Phillips, nor is it at all available, for both are *extra vascular*.

A great source of error has been the limitation of the term scrofula to that

form of disease in which the subcutaneous glands are affected; but it is doubtful whether, in the cases of death recorded as taking place from scrofula, disease of the cervical glands has been observed to be the only sign. If other affections are included, then the definition fails. The facts, that scrofula is most fatal before puberty, and phthisis after; that males fall victims to scrofula, and females to phthisis; do not prove an essential difference, but can be readily explained on the supposition of the identity of the two diseases. The localization of cancer is influenced by age and sex; but no one doubts that its various manifestations do not arise from the same cause. Dr. Madden thinks that external circumstances, peculiar morbific influences, and special modifications of functional activity and organic development in the two sexes, and at different periods of life, are sufficient to account for the observed discrepancies. And the geographic distribution of scrofula or phthisis is susceptible of like explanation. "Take by way of example, two children of the same family, both inheriting from their parents the same defective constitution.[1] The one, a boy, is sent to school, and engages with his companions in all manner of athletic exercises. He receives an injury upon his knee; inflammation follows; the latent disease, thus roused into activity, becomes fully developed, and he sinks, exhausted by the discharges and the constitutional irritation from the scrofulous joint. The other is a girl, and not exposed to the same sources of danger; but she is confined much to the house, in the acquisition of certain so-called necessary accomplishments, and exposed to the frequent sudden alternations of temperature which are unavoidable in following out the amusements of fashionable life; and thus her lungs, ill-defended, because sufficient warm clothing is not worn, become at last affected, and she dies of phthisis. Is not the disease identical in both, though its manifestations are different?" (pp. 60-61.) From this, and similar considerations, the author very rationally concludes, that scrofulous affections of external parts, and tuberculous disease of the lungs, are separate manifestations of one and the same constitutional taint, originating in the same defect of organic elements and vital energies, and to be guarded against, or treated, when existing, by the same means.

The Second Part of this valuable treatise is devoted to the consideration of the MANIFESTED DISEASE, and consists of five sections.

Section I treats of the FORMS AND VARIETIES OF PHTHISIS. Pulmonary consumption may be more or less rapid in its fatal course, depending, not on accidental or external circumstances, nor, properly speaking, on relative severity of attack, but simply on the more or less profound contamination of the blood, without which there would be no consumption. In some cases, however, a most formidable and rapid destruction of parts follows inflammation, even when the constitutional taint is not pre-eminently marked. This constitutes acute phthisis. The structural changes produced are dependent on inflammation, but differ from the products of healthy inflammation, for the same reason that this process leads to different results in a healthy and in a scrofulous lymphatic gland.

The presence of miliary granulations in acute phthisis, Dr. Madden believes to depend on bronchitis, rather than on pneumonia. In bronchitis there is an excess of changed secretion, poured into the air tubes; and, where the

[1] Dr. Walshe, in his laborious report on Phthisis, in the British and Foreign Med.-Chir. Review for January 1849, throws some doubt on the hereditary transmission of the tubercular diathesis. Louis has done the same. But a greatly extended series of accurate statistics is necessary, before absence of hereditary predisposition can be determined. The statements of patients, on this subject, are little to be depended on; and supposing them correct, is non-predisposition to be inferred, because the immediate parents have given no manifestations of disease? May they not have received from their ancestors the germs, which have not been developed, either from want of exciting causes, or from some unfavourable state of their system as a nidus?

necessary predisposition exists, a tubercular deposit takes the place of the normal secretion, and appears as miliary granulations, because it is situated in the air-cells. It is not meant, however, that *plastic* lymph may not be deposited; it is not unknown in phthisis: but it is then mixed with the tubercular matter. All cases of phthisis, whether inflammatory or not, arise alike from peculiar malnutrition; but no condition acts so energetically and rapidly as inflammation, in developing tubercles.

Section II treats of the SYMPTOMS OF PHTHISIS, which are dependent on the condition of the tubercles. These are briefly but clearly described by Dr. Madden, and they are adduced in support of his purpose of tracing out the *common* origin of all the essential symptoms.

Section III contains a lucid account of the author's views on the *analogies* between tubercular disease and DISEASES ARISING FROM MORBID POISONS. A full and correct acquaintance with any disease is, in a great measure, to be obtained by tracing its analogies with others, whose true nature has been already determined. Dr. Madden applies this to tubercular disease, and points out its analogy with diseases arising from morbid poisons. The symptoms arising from mercury, iodine, and lead, from spurred-rye in bread, from syphilis, the exanthemata, glanders, or dissection wounds, and the morbid conditions produced sometimes after operations, injuries, or parturition, are all shown to depend on the presence of poisonous matter, whether inorganic or organic. Dr. Ferguson has shown, that puerperal fever results from the absorption of decomposed or unhealthy secretions on the surface of the uterus: and Dr. Todd, in his Croonian lectures, maintains the view, that the rheumatic diathesis is dependent on the circulation of an animal poison in the blood. On consideration, there appears a great general resemblance throughout the entire series of examples of poisons. "They are, plainly, members of the same natural family, differing, as individuals will do, in particular details, and in special combinations, but having so many features in common as to show that they spring from the same stock. Fever, we find, is almost universally present, though in varying degrees, and of diversified character; the body is emaciated; the digestive functions are more or less deranged; there are pains in the limbs; the skin is seldom natural in appearance, and its functions are perverted; the pulse is small; the whole system weakened; the secretions and excretions depart more or less widely from their normal characteristics. And then, we have organic changes in many organs; the eye is often affected; the larynx inflamed or ulcerated; pustules or abscesses form in the integuments, and the subjacent areolar tissue; the brain is not uncommonly diseased; the bones, and particularly the joints, suffer severely; the mucous membranes are greatly influenced; while the important depurating viscera, the kidneys, the liver, and the lungs, are, in a peculiar manner, liable to destructive alterations. Are not the phenomena of scrofula, in general, and of phthisis, in particular, closely analogous, I would almost say identical?" (p. 95.) The fever which almost universally occurs in phthisis, bears a marked resemblance to that which depends on absorption of marsh miasma, both in its periodic accession and in its special phenomena. Emaciation, the derangement of the digestive functions, pains in the limbs, the unnatural state of the skin, the small, feeble pulse, the morbid alterations of the secretions and excretions, in phthisis, all exhibit *functional resemblances* to the effects of poisons. The resemblance is still further shown by investigating the localities of the morbid *structural* changes. Inflammation of the eye is frequent in scrofulous subjects; Louis found the trachea, larynx, or epiglottis, ulcerated in a number of cases of phthisis, evidently not from acridity of the sputa. The analogy between affections of the absorbent glands, and the existence of subcutaneous abscesses, is most striking; and the same may be said with regard to diseases of the bones and joints, the most numerous and obstinate cases of which are furnished by scrofulous subjects. The cranial contents, according to Louis, are often variously affected, espe-

cially the arachnoid and sub-arachnoid tissues. The morbid appearances found here cannot be distinguished from those produced by other diseases, as typhus, or poisoning by opium. The mucous membranes are often affected; Louis found ulcerations of the small intestines in five-sixths of his cases; they were almost as frequent in the large intestine; and he found the intestinal canal perfectly healthy from end to end in only three cases. The kidneys are sometimes, but less frequently, diseased; and Dr. Christison has noticed granular degeneration during the progress of consumption; and it is well known that a scrofulous diathesis predisposes to this affection. More frequently the liver is affected with fatty degeneration; or it presents the appearance called "lardaceous liver" by Rokitansky, the analogue of which is found in persons whose health is broken from the combined effects of mercury and syphilis. On this, Dr. Madden remarks: "Let us pause for a moment, and reflect upon this fact, for surely it is most significant. We have a general disease of the system, scrofula, exerting its chief influence on the bones, or on the glands, and drawing in its train a serious organic alteration of the liver. We have a man suffering from another disease, and from the abuse of a powerful medicine; his bones, too, are affected, and his liver becomes involved in a precisely similar way. The *causation* of the latter is not doubtful; neither bones nor liver would have been diseased as they are, but for the presence of a double poison in his system. Why should we hesitate to attribute like effects to a like cause in the former? I confess I can see no reason. The matter appears to me intelligible on this supposition, and on this alone." (pp. 104-5.) Cases of phthisis furnish the majority of examples of fatty liver. Dr. Budd found this morbid alteration in a man who died of extensive cancerous ulceration of the groins. The liver contained no carcinamatous deposit; hence its disease must have depended upon the general contamination of the system. Tubercles have been found in the liver, by Dr. Budd, in some natives of the South Sea Islands, who died of phthisis; and M. Reynaud says, that the liver is frequently thus affected in phthisical monkeys. The frequency of pulmonary disease needs scarcely be mentioned. Having concluded his comparative sketch, of which we have given a brief outline, Dr. Madden remarks: "It appears to me impossible to read what has been written without being powerfully impressed with the striking resemblance which obtains between the two series of morbid actions. There are the same extensive functional disturbances—the fever, the profuse unhealthy sweats, the disordered secretions, the emaciation, the prostration—and the same wide-spread organic alterations. Must not the causes of effects so similar, be themselves similar? Must they not, to say the very least, have something common in their nature? I believe that this is really the case, and that scrofula, with its highest and most formidable manifestation—phthisis, is as much a poison-disease, as any of those others with which we have been concerned in the former part of this section. I believe that the observed phenomena depend upon the circulation of a peculiar specific *materies morbi* in the blood, and that the tubercle itself results from the special modification of nutrition induced by that particular poison, and by that alone.

"No one doubts now that cancer is the resultant of a pre-existing general contamination, or imagines that it can be produced when that contamination is not. And why have they arrived at this conclusion? Simply because of the thousands exposed to the exciting causes, a few, and a few only, become thus affected. Schirrhus of the lower lip appears to originate, sometimes, from the irritation caused by the pipe; but millions smoke every hour of every day, and retain their lips intact. Blows on the female breast are common enough, but the number of carcinomatous mammæ thus produced is vastly inferior.

"Precisely in the same way, fever, and emaciation, and prostration of strength, and absolute inanition, may occur, and do occur, in countless cases, where tubercle, from the beginning to the end, never makes its appearance.

The marasmus in phthisis, extreme though it be, is surpassed by that which we observe from schirrhus of the stomach, and yet in the latter disease we never find tubercles. A man may be reduced to a mere skeleton, and die of absolute starvation, from total inability to digest his food, or from its unwholesome nature; and yet, though nutrition is here entirely suspended, the peculiar morbid product, of which we are speaking, is not evolved. While, in another case, the body still remaining comparatively well-nourished, and the digestion proceeding to all appearance with due regularity, the lungs or other organs contain it in abundance.

"Again, tubercle, wheresoever found, presents the identically same characters. Take it from what part of the body you may, and when examined by the microscope, it will be found to consist of the same elements, the only difference being in the intermixture of the proper tissues of the part. This is inconceivable, if we suppose it to be nothing more than an imperfect form of the natural elements, a half-generation, if I may so call it, of the healthy texture. It is quite conceivable that nerve-tubes may not be completely developed, and so fail in the exercise of their proper function; or that bone-cells may not elaborate a right secretion, and the structure which they build up be thus abnormally constructed. But it is hard to understand how the arrest, or the imperfection of these ordinary vital workings, should educe a structure totally different from the natural ones, and absolutely the same in two such diverse localities, unless there be some one special influence brought to bear on both alike.

"Yet again. Tubercle is often coetaneously deposited in many parts of the body, as is evidenced by its being found there in precisely the same stage of progress. Louis relates an interesting case of this kind, in which there were crude tubercles in the same stage of development, in the neck, the right axilla, the mesentery, the loins, the spleen, the brain, and the cerebellum; and he very justly remarks,[1] 'I really do not understand how this fact can be accounted for, unless by admitting the agency of one and the same cause, acting at one and the same time upon all these parts'." (pp. 106-9.)

In poison-diseases, we find a tendency in certain organs of the body to become affected, evidently from a natural tendency in the living body to get rid of injurious matters, whether introduced from without, or generated within. Of the former, the diarrhœa from errors in diet is an example; of the latter, the excretion of sugar by the urine, of urates and uric acid, of many medicinal agents, as ferrocyanide of potassium, sulphuret of potassium, sulphocyanide of potassium, iodine, various organic acids, arsenic, tartarised antimony, all of which have been found to be eliminated by the kidneys. MM. Danger and Flandin state, that arsenic escapes by the lungs, liver, and skin; and Mr. Herapath and Dr. Taylor have found it in the liver. The presence of certain organic substances has been detected in the urine, as the *amanita muscaria*, opium, belladonna, hemlock, &c., the effects of which are communicated to other animals, on the fluid being administered to them. Dr. Percy has shewn, that in cases of poisoning by alcohol, that fluid may be found after death in the brain, liver, blood, bile, and urine. It would appear likely, then, that the local changes are caused either by the action of the morbid poison itself upon the parts to which it is derived, or by the undue activity of these parts, in their efforts to eliminate the offending matter. The effects of the poison of lepra, and of the exanthemata, on the skin, are examples of this; as are also the abdominal complications in typhus fever, arising from an over-excitement of the intestinal glandulæ, whose function is probably to get rid of putrescent matters, and the occurrence of diarrhœa and inflammation, and ulceration, in scrofula and phthisis. These are all evidently analogous. The perspirations in consumption are probably, like those of intermittent fever and rheumatism, attempts to get rid of the

[1] Researches on Phthisis. Sydenham Society's edition, p. 144.

morbific matter from the system. Fatty liver arises from the excess of a normal ingredient: how is it produced? The livers of geese are made fatty, in France, by shutting the animals up without food, in close cages, exposed to a graduated heat. Emaciation takes place, and the livers increase in size, and become fatty. And, in the non-phthisical cases of fatty liver, extreme wasting has been observed. Hence it is partially explained by the removal of adipose matter from other parts of the system. But emaciation is not always attended by fatty degeneration of the liver; hence another cause must be sought. When fatty liver occurs in persons not affected with tubercle, they have been the subjects of some blood-disease, as cancer or pemphigus, or of extensive suppuration. Moreover, the abnormal presence of fat is an evidence of a process of degeneration; and, therefore, its existence in tubercle is one of the many proofs that this morbid product arises from malnutrition. The lesion under consideration can be brought under the same general law of analogy, in the following way:—"The specific poison, acting at all parts, interferes with the healthy elaboration of every tissue. As a consequence of this, fat is found in excess, and where it does not naturally exist. This fat, absorbed into the blood in large quantities, is laid hold of by the hepatic cells, which have a natural affinity for it. It is taken up by these for the purpose of excretion, but the supply is greater than the demand, and it therefore accumulates in the new position. There is here a perfect analogy with that which we have supposed to occur in the intestinal glandulæ." (pp. 117-18.) The prevalence of tubercle in the lungs, Dr. Madden explains, by supposing the poison brought to them by the blood, to exercise a specific modifying influence on their nutrition; or (which he supposes a more satisfactory interpretation), that the general law is here followed, by which particular matters are attracted to, and retained in, certain organs and tissues. The localisation of the disease in the apex of the lungs is more difficult of explanation; but it is evidently analogous to the symmetrical distribution of other affections, as noticed by Dr. Budd, the peculiar action of chlorine acids on the heart, observed by Mr. Blake, or the action of strychnine on the *true spinal system*. And the greater frequency of tubercles in the left lung is analogous to what is observed in cancer, that the right breast and the lower lip are most commonly affected. These evidences of selection, like what we see in the effects of other poisons, are confirmatory of the doctrine of the poison-origin of phthisis; and other resemblances may be found in the period of latency, and in the exaltation of the activity of the poison, by depression of the vital energies. Another general law, applicable to phthisis in common with the results of other poisons, is the tendency of poisonous matters to accumulate, in considerable quantities, in the part to which they are determined. And it is remarkable, that parts organically damaged, either by mechanical injury, or antecedent inflammation, are specially liable to become the seat of tuberculous deposition, or of the manifestation of any other poison, as small-pox.

Dr. Madden, at the end of this section, notices the objections which may be made to the theory he has propounded. The objection, that the poison of scrofula has never been isolated, would apply with equal force to intermittent fevers, or typhus, or plague. There is no apparent distinction between the matter of syphilis, gonorrhœa, or small-pox: there is nothing here which can guide us to the cause of their specific properties. The objections arising from the non-contagious or non-infectious nature of phthisis, may be answered in the same way. Intermittents and rheumatism are not contagious: and lepra cannot be propagated by inoculation.

Section IV contains some judicious and careful remarks on the DIAGNOSIS OF PHTHISIS, which, however, our limits prevent us from attempting to analyse. We can only remark, that Dr. Madden attaches their due importance both to physical signs and general symptoms, and does not unduly exalt one at the expense of the other.

Section V is devoted to the TREATMENT. From pathological reasoning, Dr. Madden points out that "the treatment of tubercular diseases, to be effectual, must be directed to the securing of the following ends, viz., the neutralization of the poison, or its elimination from the system, and the restoration to a healthy state of the great function of nutrition in all its parts. Combined with these, there must be, of course, the meeting of local evils by local remedies." (p. 151.) A specific for the neutralization of the poison has not been obtained; but it should no less be sought for. A mere *solvent for tubercle is not the thing required.*

As regards the acute form of the disease, its symptoms must be treated antiphlogistically, yet with great caution. Dr. Madden points out dangers from bleeding in phthisis, and from mercury in scrofulous subjects; but the latter remedy he considers valuable in acute phthisis. With it he combines salines, especially nitrate of potash. Tonics should be had recourse to as soon as the symptoms permit.

In the ordinary forms of phthisis, the indications pointed out by the author are: "To secure the removal of the poison by the general channels of outlet,—to moderate the fever which it always produces to a greater or less extent,—to check undue local excitements, which are very apt to occur during the process of elimination,—and to support the system at large, so that it may be able to bear the constant demands made upon it." (pp. 155-6.) The remarks on the eliminating power of the skin, and the importance of maintaining its function in a state of freedom; and on the necessity for preserving the lungs unimpeded in their eliminative function, are worthy of a careful perusal. With respect to Liebig's view of hyperoxidation in phthisis, Dr. Madden remarks:

"I may here shortly notice a theory, which, both from the eminence of its illustrious propounder, and from its own very attractive simplicity, has been received with much favour, and found many advocates; and which, if true, would completely set aside our argument for open-air exercise in consumptive cases. I mean the view taken by Liebig, that in phthisis there is excessive oxygenation going on, and that this is the true cause of the destructive waste of tissues. For it is very evident, that upon this supposition we are doing all we can to increase the mischief, by sending our patients where they will respire freely in a pure air; seeing that by this method we increase the quantity of the destroying agent, which is received into the lungs at each inhalation. A close, ill-ventilated room would, under such circumstances, be infinitely preferable.

"But how stands the case? Clinical experience, the ultimate and only true test of all medical theories, is completely at variance with this hypothesis. We see that our patients do best when they have the advantage of breathing a pure air, with its full proportion of oxygen, provided its other qualities, in respect of temperature and hygrometric condition, be not injurious; and we see also that their improvement is, in very many cases, closely proportionate to the facilities afforded of respiring freely in such an atmosphere.

"And when we come to examine the question a little more closely, the doubt already engendered by these observed facts becomes greatly increased, if even the certainty of the erroneous nature of the theory be not definitely established.

"According to Liebig's view, urea is the result of the oxygenation of uric acid, formed by the metamorphosis of tissue; and the presence of uric-acid deposits in the urine is a measure of the imperfection of this process. In phthisis, therefore, if excessive oxydation were going on, these deposits should not occur, and the uric acid should be, both positively and relatively to the quantity of urea, at a low point. But we know that the urine of consumptive patients is often loaded with such sediments (I have notes of some cases illustrating this fact, the disease being in various stages, and

have observed many more); and the researches of Becquerel clearly show that the supposed law does not hold good. Thus, in chlorosis, a disease of anæmia, in which oxygenation must be most imperfect, by reason of the deficiency of red blood-corpuscles, he found that the uric acid, instead of being in excess, was positively and relatively below, rather than above, the healthy average. The same, also, was observed in a case of pulmonary emphysema, with intense dyspnœa. While in acute hepatitis, and in phthisis, the uric acid was at a maximum, instead of a minimum. Moreover, as Dr. Bird very justly observes, there is another and a serious objection to the theory, in the instance of diabetes mellitus; for 'this disease is, in the majority of cases, complicated with phthisis; indeed so frequently, that some pathologists have supposed this complication to be a necessary one. Yet here, while phthisical disorganization is going on, and excessive oxydation is supposed to be entirely destroying the tissues of the body, an abundance of highly-carbonized—indeed a readily oxydizable—substance is generated in the body, circulates in the blood, and escapes by the kidneys. By what ingenuity the fact of the (assumed) excessive oxydation, going on contemporaneously with the copious formation of an inflammable body, sugar, can be reconciled with this hypothesis, I am at a loss to determine.'

"I would add, that the frequent occurrence of fatty liver, and the increased proportion of fat always present in tubercles, are also inexplicable under the above theory; and that, if it were true, it would scarcely be comprehensible how chlorosis should be so often terminated by confirmed phthisis." (pp. 168-70.)

Dr. Madden considers that the importance attached to the selection of a proper climate for scrofulous children, is in strict accordance with the views he advocates of the essential nature of the tubercular constitution, and of the disease itself. Besides the skin and lungs, the depurative action of the liver and kidneys must be assisted; and especial care must be taken not to overtask any one single organ, or set of organs. Dr. Madden does not believe that any fixed rules for diet can be laid down. He would only avoid substances known to be indigestible, and occasionally restrict the use of stimulants; and, in other respects, consult the individual's experience, or our own personal observation. He recommends salines to increase the action of the kidneys, to enable these organs to carry off the azotized elements of metamorphosed tissue, which would otherwise accumulate.

The moderation of the fever is dependent on the arresting of the disease itself. To check undue local excitement in the lungs, giving rise to hæmoptysis, Dr. Madden recommends cooling aperients, with nitrate of potash or acetate of lead, when the bleeding is of any extent. He recommends friction of the surface of the chest, especially with strong acetic acid, combined with turpentine or acetum lyttæ. The intestinal mucous membrane may also be the seat of excitement; and here much may be done in the way of prevention, by careful regulation of diet, and a due attention to the state of the bowels. Where the irritation has produced diarrhœa, he recommends chalk mixture with aromatic confection and opium, or trisnitrate of bismuth with magnesia; and when the tongue is bright red or spotted with aphthæ, biborate of soda may be given. In the fulfilment of the last indication, to support the system at large, the deficiency of red particles points to iron as a remedy; and, as such, it is very efficacious, except in some exceptional cases, chiefly where there is a strong tendency to hæmoptysis. Quinine and other vegetable bitters are valuable. Dr. Madden considers iodine much less useful in phthisis than in the more external manifestations of scrofula. Iodide of potassium seems most likely to be of service; principally, because its use can be persisted in.

Dr. Madden has but a low opinion of *Iodine Inhalations*, and of inhalations in general in phthisis. He has great confidence in cod-liver oil, but does not consider that it acts either by its iodine, or by merely supplying

matter for combustion. He has no confidence in naphtha. With a few remarks on special remedies for particular symptoms, the work, so far as regards Phthisis, terminates. It is followed by an Appendix, containing some valuable information on the CLIMATE OF TORQUAY, where Dr. Madden resides.

We cordially recommend our readers to peruse this instructive Treatise, and not to rest satisfied with our account of it. While apparently indulging in theories, the author never neglects observation; and hence, the views which he brings forward are such, as to merit careful attention from every candid pathological inquirer.

WORKS ON CHOLERA, the Titles of which are given at page 72 of the January Number; to which are now added the following:—

11. CHOLERA GLEANINGS: a Family Hand-Book. By Dr. J. GILLKREST, Inspector-General of Army Hospitals, and Corresponding Member of the Paris National Academy of Medicine. 8vo. pp. 86. Gibraltar: 1848.
12. THE CHOLERA NOT TO BE ARRESTED BY QUARANTINE; with Practical Remarks on the Treatment, Preventive and Curative, of the Disease. By GAVIN MILROY, M.D., Member of the Royal College of Physicians. 8vo. pp. 51. London: 1847.
13. PLAIN DIRECTIONS FOR THE PREVENTION AND TREATMENT OF CHOLERA. By THOMAS ALLEN, M.R.C.S., and Surgeon to the Cholera Hospital at Oxford, 1832. Fourth edition. 8vo. pp. 42. Oxford: 1848.
14. A SKETCH OF A POPULAR AND A NOVEL TREATMENT FOR DIARRHŒA, DYSENTERY, AND ASIATIC CHOLERA. By EDMUND SKIERS, M.D. 8vo. pp. 91. London: 1849.
15. TWO LECTURES ON CHOLERA AND INTERMITTENT FEVER; addressed to the Members of the Medical Profession in Manchester. By CHARLES W. BELL, M.D., F.L.S. 8vo. pp. 101. London: 1849.
16. EDINBURGH MONTHLY JOURNAL OF THE MEDICAL SCIENCES, for December 1848. Some Account of the Practice in the Cholera Hospital in Surgeon-square, Edinburgh. By WILLIAM ROBERTSON, M.D., F.R.C.P. Ed. Physician to the Edinburgh Royal Infirmary, and Cholera Hospital.
17. REPORTS ON ASIATIC CHOLERA IN REGIMENTS OF THE MADRAS ARMY, FROM 1828 TO 1844; with Introductory Remarks on its Modes of Diffusion and Prevention. By SAMUEL ROGERS, F.R.C.S., and Surgeon of the Madras Army. 8vo. pp. 267.
18. THE LEADING PHENOMENA OF EPIDEMIC CHOLERA; with some Plain Suggestions for its Better Treatment and Prevention. By AMBROSE BLACKLOCK, Assistant Surgeon, Madras Medical Establishment. 8vo. pp. 68. Madras: 1848.
19. THE CODE OF SAFETY; or Causes, Effects, and Aids, Preventive and Curative, as well of other Epidemics, as also of Asiatic Cholera. By G. F. COLLIER, M.D. 8vo. pp. 96. London: 1849.
20. REPORT ON THE STATE OF THE CRICHTON INSTITUTION DURING THE PREVALENCE OF CHOLERA IN DUMFRIES. 8vo. pp. 8.

WE resume our review of recent Pamphlets and Memoirs on Cholera. The origin, progress, and diffusion of this Asiatic malady, are subjects beset with uncertainty, and enveloped in obscurity, regarding which men's sentiments are sometimes so completely opposed, as not to admit of mediate gradation—wherein, however, (according to the maxim, "*medio tutissimus ibis*,") truth will generally be found. The whole subject of epidemic and contagious diseases is manifestly one of much difficulty; since persons, reasoning from precisely the same premises, arrive at opposite conclusions. The examination, however, of the facts, recorded by different observers, has not always been conducted with that due care, and freedom from pre-

have observed many more); and the researches of Becquerel clearly show that the supposed law does not hold good. Thus, in chlorosis, a disease of anæmia, in which oxygenation must be most imperfect, by reason of the deficiency of red blood-corpuscles, he found that the uric acid, instead of being in excess, was positively and relatively below, rather than above, the healthy average. The same, also, was observed in a case of pulmonary emphysema, with intense dyspnœa. While in acute hepatitis, and in phthisis, the uric acid was at a maximum, instead of a minimum. Moreover, as Dr. Bird very justly observes, there is another and a serious objection to the theory, in the instance of diabetes mellitus; for 'this disease is, in the majority of cases, complicated with phthisis; indeed so frequently, that some pathologists have supposed this complication to be a necessary one. Yet here, while phthisical disorganization is going on, and excessive oxydation is supposed to be entirely destroying the tissues of the body, an abundance of highly-carbonized—indeed a readily oxydizable—substance is generated in the body, circulates in the blood, and escapes by the kidneys. By what ingenuity the fact of the (assumed) excessive oxydation, going on contemporaneously with the copious formation of an inflammable body, sugar, can be reconciled with this hypothesis, I am at a loss to determine.'

"I would add, that the frequent occurrence of fatty liver, and the increased proportion of fat always present in tubercles, are also inexplicable under the above theory; and that, if it were true, it would scarcely be comprehensible how chlorosis should be so often terminated by confirmed phthisis." (pp. 168-70.)

Dr. Madden considers that the importance attached to the selection of a proper climate for scrofulous children, is in strict accordance with the views he advocates of the essential nature of the tubercular constitution, and of the disease itself. Besides the skin and lungs, the depurative action of the liver and kidneys must be assisted; and especial care must be taken not to overtask any one single organ, or set of organs. Dr. Madden does not believe that any fixed rules for diet can be laid down. He would only avoid substances known to be indigestible, and occasionally restrict the use of stimulants; and, in other respects, consult the individual's experience, or our own personal observation. He recommends salines to increase the action of the kidneys, to enable these organs to carry off the azotized elements of metamorphosed tissue, which would otherwise accumulate.

The moderation of the fever is dependent on the arresting of the disease itself. To check undue local excitement in the lungs, giving rise to hæmoptysis, Dr. Madden recommends cooling aperients, with nitrate of potash or acetate of lead, when the bleeding is of any extent. He recommends friction of the surface of the chest, especially with strong acetic acid, combined with turpentine or acetum lyttæ. The intestinal mucous membrane may also be the seat of excitement; and here much may be done in the way of prevention, by careful regulation of diet, and a due attention to the state of the bowels. Where the irritation has produced diarrhœa, he recommends chalk mixture with aromatic confection and opium, or trisnitrate of bismuth with magnesia; and when the tongue is bright red or spotted with aphthæ, biborate of soda may be given. In the fulfilment of the last indication, to support the system at large, the deficiency of red particles points to iron as a remedy; and, as such, it is very efficacious, except in some exceptional cases, chiefly where there is a strong tendency to hæmoptysis. Quinine and other vegetable bitters are valuable. Dr. Madden considers iodine much less useful in phthisis than in the more external manifestations of scrofula. Iodide of potassium seems most likely to be of service; principally, because its use can be persisted in.

Dr. Madden has but a low opinion of *Iodine Inhalations*, and of inhalations in general in phthisis. He has great confidence in cod-liver oil, but does not consider that it acts either by its iodine, or by merely supplying

matter for combustion. He has no confidence in naphtha. With a few remarks on special remedies for particular symptoms, the work, so far as regards Phthisis, terminates. It is followed by an Appendix, containing some valuable information on the CLIMATE OF TORQUAY, where Dr. Madden resides.

We cordially recommend our readers to peruse this instructive Treatise, and not to rest satisfied with our account of it. While apparently indulging in theories, the author never neglects observation; and hence, the views which he brings forward are such, as to merit careful attention from every candid pathological inquirer.

WORKS ON CHOLERA, the Titles of which are given at page 72 of the January Number; to which are now added the following:—

11. CHOLERA GLEANINGS: a Family Hand-Book. By DR. J. GILLKREST, Inspector-General of Army Hospitals, and Corresponding Member of the Paris National Academy of Medicine. 8vo. pp. 86. Gibraltar: 1848.
12. THE CHOLERA NOT TO BE ARRESTED BY QUARANTINE; with Practical Remarks on the Treatment, Preventive and Curative, of the Disease. By GAVIN MILROY, M.D., Member of the Royal College of Physicians. 8vo. pp. 51. London: 1847.
13. PLAIN DIRECTIONS FOR THE PREVENTION AND TREATMENT OF CHOLERA. By THOMAS ALLEN, M.R.C.S., and Surgeon to the Cholera Hospital at Oxford, 1832. Fourth edition. 8vo. pp. 42. Oxford: 1848.
14. A SKETCH OF A POPULAR AND A NOVEL TREATMENT FOR DIARRHŒA, DYSENTERY, AND ASIATIC CHOLERA. By EDMUND SKIERS, M.D. 8vo. pp. 91. London: 1849.
15. TWO LECTURES ON CHOLERA AND INTERMITTENT FEVER; addressed to the Members of the Medical Profession in Manchester. By CHARLES W. BELL, M.D., F.L.S. 8vo. pp. 101. London: 1849.
16. EDINBURGH MONTHLY JOURNAL OF THE MEDICAL SCIENCES, for December 1848. Some Account of the Practice in the Cholera Hospital in Surgeon-square, Edinburgh. By WILLIAM ROBERTSON, M.D., F.R.C.P. Ed. Physician to the Edinburgh Royal Infirmary, and Cholera Hospital.
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judice, which might keep the mind from erroneous conclusions. We should be exceeding the limits prescribed to ourselves, in our Bibliographical Notices, were we to examine the whole evidence relative to the manner in which a contagious virus originates; and we must therefore rest content with briefly noticing the points of dispute between extreme non-contagionists and contagionists, along with such conclusions as are sanctioned by evidence, and which have been fairly deduced from the additional facts, on the nature and origin of fevers and Cholera, industriously collected in modern times.

Both extreme contagionists and non-contagionists, reasoning on the nature of apparently contagious fevers, are reduced to the necessity of maintaining, that *contagious virus* is unchangeable and sempiternal, and cannot be generated, *de novo*, by epidemic and endemic agents; but that it is capable of producing, in the human body, a re-producing and self-multiplying cause *sui generis*. It is a fact well ascertained, that particular atmospheric conditions so modify the *materia morbi* of *specific contagions*,—such as small-pox and cow-pox,—that, in some places, it is incapable of communicating a disease of its own kind; and from this admission, or establishment of fact, the deduction naturally follows, that contagion, in more questionably contagious diseases, is only an accessory property, originating from epidemic and endemic conditions of surrounding media, which are contingent and uncertain. These cooperating circumstances, or conditions, are impure and deficient food, fatigue and fasting, among masses of people accidentally collected; filth, and accumulation of human effluvia, in ill-ventilated apartments, low, damp situations, and malarious emanations from the banks of rivers, or stagnant ditches—aided in their operations by sudden reductions of temperature, and a peculiar, epidemic constitution of the atmosphere. Though a combination of these conditions, seems necessary to the development of a contagious fever or Cholera virus, the latter two must be considered as general agents, or exciting causes. They only require a suitable, or predisposed, condition of the recipient human body, to give them currency in producing a malady, against which isolation can bestow no absolute security, as it is capable of propagation over vast tracts by atmospheric diffusion; and, in a limited degree, by means of contagion. Such, sometimes, are the characteristics of Cholera, as to its mode of propagation; but in the production of the disease, all the other cooperating conditions seem to act as predisposing causes.

It is impossible, therefore, and altogether inconsistent with evidence, to concede to the extreme non-contagionists, that marsh miasmata and malaria are incapable of generating a virus; or to agree with the contagionists, that specific contagions are of an invariable quality. Mr. Rogers, in his introductory remarks to the valuable Cholera Reports of the Madras army, blinks this question,—*Is Cholera ever propagated by contagion?* by answering with two indefinite and negative conclusions:—

1*st. Cholera has its origin in other than human sources: and the communication of the sick with the healthy is not necessary for its diffusion.*

2*nd. Cholera may be in many cases averted, and its mortality much lessened, by proper precautionary measures being adopted.* (p. 13.)

These principles of belief are warranted by facts, and have our unqualified approval; though they altogether keep out of view the important investigation, whether Cholera ever becomes a contagious disease. The propagation of it among persons composing large camps, and its dispersion in towns situated on its course, have been thought dependent on a different law from that by which it is synchronously diffused over large tracts of country: and if the former be not *contagion*, it is difficult to assign this mode of transmission to any other law. Mr. Rogers justly states the facts, as follows:—

"*The disease, when produced, attaches itself to the mass, and is by them transported from one place to another, and in this way disseminated to persons who were previously free from it. The truth of this appears to have attained*

general belief, and with justice, as we have, I think, evidence to prove. Dr. Henderson (see Chap. ix) *believed that on one occasion the disease was brought into the garrison of Bellary by a regiment of native infantry which was passing. And Dr. Parry* (see Chap. x) *also relates a similar circumstance occurring at the same place. And Dr. Mouatt* (see Chap. vii) *remarks 'though we do not deem the disease infectious or contagious, it is proper to state that it broke out in one village after the regiment encamped in its vicinity.'* "

Mr. Rogers seems unwilling to admit that Cholera, in such like examples, manifests a contagious character; and supposes that a specific poison, the primary and essential cause of the disease, can lie dormant in all situations in India, till certain accessory causes give it activity; the development of the disease following of course. This supposition is as unphilosophical as it is unsupported by fact; and, while Mr. Rogers' reports give satisfactory evidence of the *malarious* origin of Cholera in certain situations, he had only to admit, in explanation of these phenomena, that under certain conditions, the disease becomes partially transmissible by human contact, and more generally diffusible by an epidemic constitution of the atmosphere, as known by analogy in influenza and other epidemic diseases.

Dr. Gillkrest, the author of the pamphlet on our list, has been long known as an advocate of the non-contagion doctrine of *yellow fever*, in opposition to Sir William Pym; and he now appears to do battle for the same cause in respect of *Cholera*. He denies "*in toto*, the transmissibility of ague and remittent fevers, and so of Cholera certainly;" or, in other words, does not admit that a disease of plainly malarious origin, can, under any circumstances, become contagious. After what we have already said on this head, it is almost superfluous to follow the author through his various statements on this subject, gleaned from many official reports. We concede to him full credit for the sincerity and disinterestedness of his opinions, however widely we may differ from him; and would have been glad to see that his professional courtesy could acknowledge not less worthy motives in Sir William Pym, relative to the part which this gentleman had in establishing quarantine in England, during the prevalence of the Cholera in 1832. The opinions expressed in reviewing the pamphlets on Cholera in our first Number, will shield us from the accusation of being more than lukewarm contagionists, as regards this disease: and, when epidemic, we do not believe it can be arrested in its course, or kept from our shores, by the most stringent measures of quarantine.

On this head we most cordially agree with the opinions expressed in Dr. Milroy's pamphlet; the object of which is to investigate the mode in which Cholera is usually propagated, and to detail the means necessary for its prevention and cure. The author briefly sketches the history of the disease, as it prevailed in India, at various times, previous to the year 1817, when it first attracted general attention. In this narrative, however, he has omitted several facts. In its most malignant form it was well known to, and accurately described by, Curtis, Girdlestone, Duffin, and other writers of the last century, who had witnessed its outbreak at various times and places in the East Indies. In the spring of 1781, it attacked a body of troops near Ganjam, on their way to join Sir Eyre Coote's army; afterwards found its way to Calcutta, and occasioned great mortality among the native population, and then pursued its course to the northward. Two years subsequently, it destroyed upwards of 20,000 pilgrims assembled to celebrate a festival at Hurdwar; and in 1786 raged with great fatality in the confederate Mahratta and Moghul armies, under Hurry Punt, when employed against Tippoo Sultan; and can in no respect be considered a new disease, having been described by Hippocrates, Alexander Trallianus, and by several Chinese and Hindoo medical writers of very early date.

The outbreak of the epidemic in 1817—its extension through southern Asia, and subsequent diffusion both in a northern and western direction—its

migration in 1823, from India into Persia—its passage from the Georgian and Circassian frontiers into Russia—with its second outbreak in 1829, and progress through Georgia into Europe—are detailed with circumstances full of interest and instruction, as to the resemblance between some of the invasions of the influenza, and those, too, of the Cholera now described.

Dr. Milroy clearly and correctly points out how "a malady, not originally and necessarily infectious, may become so under certain unsalutary circumstances; and, on the other hand, that infection may act an occasional and very subordinate part in the diffusion of an epidemic, recognized by all writers to depend upon a certain atmospheric malaria." The atmosphere is the chief channel by which cholera and influenza are disseminated; but the admission is forced on us by facts, that, in both diseases, the recipient and victim of the morbific miasm may become a subordinate agent in its dissemination. Limited propagation, therefore, by means of personal intercourse, may take place during the continuance and agency of the *epidemic atmospheric constitution*, though the disease be not *essentially* or *primarily* infectious. In connexion with this subject, the occasional contagiousness of erysipelas, adduced by Dr. Reid in his recent letter, had been previously employed, at p. 26, of Dr. Milroy's pamphlet, and for a like purpose of analogical illustration. Cholera being thus capable of spreading itself by other ways than personal communication, preventive quarantine measures must be in a great degree nugatory: and to inculcate this doctrine, seems to be the main object of the valuable pamphlet now before us. Many judicious and useful practical observations are given by Dr. Milroy in regard to treatment, for which we refer our readers to the publication itself.

Mr. Allen's pages, containing a summary of his experience in treating the epidemic which prevailed at Oxford in 1832, are written, he tells us, for the guidance of non-professional persons; and, he says, embrace everything consistent with general medical experience. All disputed points are purposely avoided; and we may, on the whole, recommend this pamphlet as embodying safe and judicious advice, both for professional and non-professional readers.

Dr. Skiers' sketch is indeed a *novel*, though not likely, we think, to be a *popular*, mode of treatment, in English and Asiatic Cholera. It opens with great professions of philanthropy and sense of public duty, in his desire to assuage the sufferings of the poor and helpless; but which met, as the doctor laments, with no corresponding Christian or charitable feeling on the part of Lord John Russell and the Board of Health; to which authorities the author, in his first burst of benevolence, sent the manuscript entitled,—"Extract from a Popular Sketch, and a certain Novel Treatment for Diarrhœa, Dysentery, Sporadic Cholera, and Rational Treatment of Epidemic Cholera." Along with this, he left in the hands of the Board of Health a Cholera medal, with which he appears to have been honoured at Paris, during the prevalence of the disease in 1832. By repeated delays, and verbal messages to "call again," our author's patience became exhausted, and he determined that, delay being dangerous, as Cholera was rife, his views of treatment, founded on long practical experience, should be no longer kept from publicity. Covered by a mass of verbiage, we find something good in this pamphlet—a few grains of wheat in many bushels of chaff. Dr. Skiers recommends a stimulating hot water bath, mixed with powdered mustard or pepper; a large mustard cataplasm to be applied along the spine, and the use of cold drinks; all of which are rational enough. The chief novelty of his treatment, however, seems to be the "insufflation into the bowels of an antiperistaltic powder, starch or charcoal, by means of a tube or small syringe, after each alvine evacuation," giving also, by the mouth, a tea-spoonful of the same, mixed with water or other drinks, a variety of which he prescribes. We can scarcely sympathize with the disappointed author for the treatment he has met with from the Board of Health; deeming that sound discretion was exercised in regard to his appeal for adoption as an authority on Cholera.

Dr. C. Bell's lectures, delivered to the members of the medical profession at Manchester, and now published in the form of a pamphlet, are a repetition of his Report on the Epidemic Ague, or "fainting fever", of Persia, which occurred at Teheran in the autumn of 1842; an account of which will be found in the October number of the *British and Foreign Medical Review* for 1843. In his first lecture, the author considers the nature and treatment of cholera, in reference to its analogy with congestive agues of a quotidian type. In the treatment, therefore, the intentions are,—1st. *To prevent disturbance of, or restore natural action to, the capillary circulation.* 2nd. *To prevent excessive congestion, by anticipation.* 3rd. *To relieve congestion, if it have taken place.* The first may be accomplished by producing a sudden general impression on the nervous system, as by sudden immersion in cold water, or by administering those medicines possessing peculiar tonic powers to prevent periodicity, such as quinine. The second and third may be best effected by the early use of venesection. Dr Bell's views are the same indeed as maintained by some of our earliest and most celebrated physicians; and being founded on good sense and accurate observation, must daily acquire importance in the mind of every judicious member of the profession. In the second lecture Dr. Bell enters more fully into the question of the origin, nature, and pathology of Cholera; concluding that the disorder is not originally, but secondarily, in the blood, and therefore, that the primary cause must be morbid impression on the sympathetic nerves. In this, however, we can scarcely concur; agreeing, as we do, with Professor Webb, Dr. Parkes, and others, that Cholera is essentially a functional blood disease, wherein, by the mere cessation of endosmotic function in the pulmonic cells primarily, all vital operations depending on such endosmosis, cease as a matter of course. Microscopic observations have shown that the blood corpuscles are shrivelled and collapsed in Cholera, and have lost their power of absorbing oxygen, thus giving rise to congestion of the pulmonary capillaries: and we therefore question the soundness of Dr. Bell's opinions on this head. With regard to remedies, the author's chief dependence is on a combination of quinine and iron, as possessing in a remarkable degree the power of checking the vomiting and purging, and gradually restoring circulation, warmth, and secretion, without the assistance of any other applications. The pamphlet is well worthy of perusal, as containing much matter for reflection, regarding an improved system of treatment for Cholera.

Dr. Wm. Robertson gives the result of his practice in the Edinburgh Cholera Hospital, and a statistical statement of the deaths and cures among 131 patients admitted. Of these, 76 died, 28 were dismissed cured, and 27 (for the most part convalescents) remained under treatment. The proportion of female patients exceeded that of males in the ratio of 8 to 43. It is remarkable, that in several of the cases occurring in nursing-women, the mammary secretion was not arrested by the attack of Cholera. Little is said of the symptoms of the disease, as it appeared among hospital patients; the chief object of the communication being to describe the mode of treatment, and the efficacy of particular remedies. *Bloodletting* was tried in seven cases, and in an early stage, while yet the pulse was tolerably full. The quantity of blood drawn varied from 12 to 20 ounces, and the operation usually promptly relieved the patients from cramps; and the author is of opinion that venesection, when practised early and upon suitable subjects, will be found to be at least *good* practice, probably the best that can be adopted. An efficacious mode of using the *hot bath*, without fatigue to the patient, as frequently practised by medical men in India, is favourably spoken of, with a view of producing reaction, and restoring the natural temperature of the body. "The plan is to apply a sheet wrung out of warm water, as hot as the patient can bear it, so as to include and closely embrace the limbs, and to leave no part of the person but the head uncovered. Over this sheet several blankets are tightly wrapped, or 'packed,' after the fashion of the hydropaths, but without the

slightest respect for their pathology, or wish to imitate what they can with justice claim as their exclusive practice. Between the folds of the blankets, vessels full of warm water are disposed at intervals. The patient is then placed in a position which enables him to vomit over the side of the bed, and is supplied with water, hot or cold, *ad libitum*." *Chloroform* inhalations were administered with all the precautions necessary to insure success, and before the eyes of many observers of acknowledged accuracy. Truth, however, compels the author to state, that although chloroform has done much for the *comfort* of his Cholera patients, it has done nothing for their *cure*. "The cramps and urgent vomiting cease under its use, but recur whenever the patient awakes; and, although the soporific influence be maintained for hours by repeated inhalations, the result is still the same. The acts of vomiting and purging cease for a time, but the fluids are nevertheless still collecting in the stomach and bowels; the pulse becomes smaller and smaller, till it finally ceases to be felt at the wrist; the respiration becomes slower, the temperature at the surface sinks, as in too many cases of fatal collapse, and death closes the scene." Many trials of the *Persian petroleum* were made in the hospital; but though found useful in preventing the recurrence of vomiting, this drug certainly seems to possess no specific action as a cure for Cholera. *Injection of saline fluid* into the veins was tried in eight cases, and attended with only temporary amendment, all these patients having died within fourteen hours. Dr. Wm. Robertson's observations bear the impress of candour and sound judgment, and may be usefully perused by those desirous of trying new remedies of doubtful utility in this intractable disease.

Mr. Rogers' Reports on Cholera, as it appeared in various regiments serving in the Madras presidency, contain most valuable facts regarding the nature and symptoms of the disease, along with much useful information on the merits of the different remedies employed by the medical practitioners of India. Having already disposed of Mr. Rogers' prefatory remarks, we may here confine ourselves to gleaning from the reports, opinions as to the efficacy of particular remedies, hitherto untried or not generally employed. The application of *bandages* to the extremities speedily and effectually relieved cramps; and Dr. French is of opinion, that in no case of spasmodic cholera should they be omitted. *Cold douche* to the head, and general cold affusion, afforded great relief to the patients. *Blistering of the spine* and mustard cataplasms to the stomach were used by Dr. Parry, as subsidiary to the internal treatment by *calomel* and *opium*, with draughts of ammonia, æther, and camphor mixture. This gentleman states that the effects of cold affusion to the head were never permanent, and in one or two cases appeared to have been of dubious efficacy. In three cases of the disease, Dr. Parry had recourse to *galvanism*, in conjunction with other remedies. It appears to have had wonderful effect in rousing the sinking energies of the frame, and permanently restored the circulation in one case; and though it failed in the other two, it is recommended as a remedy well worthy of further trial. *Electro-magnetism* was also tried by Dr. Chapman, of H. M. 63rd regiment, in 35 cases, 20 of which terminated successfully; and in all, life was evidently prolonged by its use. It is considered a good auxiliary in the treatment of cholera; and, fortunately, its employment does not interfere in any way with the administration of other remedies. We recommend these reports to the attention of the profession, as containing a collection of valuable matter relative to the nature and treatment of cholera.

We regret that so much apparent talent should have been wasted in the wildest fancies of hypothesis, on the origin, nature and pathology of Cholera, as exhibited in Mr. Blacklock's pamphlet; and as all like attempts, which are not founded on a careful collation of facts, and accurate deductions from them, are calculated to foster spurious for real knowledge, we cannot sufficiently deprecate the substitution, whether in medicine or other sciences, of so fruitless a system of theory in place of observation and fact. Mr. Blacklock's

theory of the disease is quite as wild and hypothetical as that of Dr. Holmes, already noticed; differing from it, however, in ascribing the positive electrical condition and acid exudation from the surface of the large intestines, to a pustular punctiform eruption, preceding attacks of Asiatic cholera. The mucous surface of the stomach, the skin, and perhaps the bronchial surfaces, are at the same time considered to be in a negatively electrical condition, and secreting free alkali, simply because the mucous surface of the colon is positive and secreting acid. "The ganglionic system of the abdomen is therefore in a state of high excitement, and, from excess of action, resolves the oxygen and hydrogen of the tissues into water, which passes off by the bowels; while the spinal respiratory system is in a state of great depression, and, by its diminished action, permits carbon to accumulate in the blood, instead of eliminating it, as in health, from the skin and bronchial surfaces. The increased morbid excitability of the ganglionic system is occasioned by the absence of sulphuretted hydrogen from the large intestine; while the depressed state of the spinal respiratory system is occasioned by a want of free electricity in the atmosphere to excite the respiratory surfaces." In these assertions of Mr. Blacklock's, much has been assumed which can be easily disproved. The punctiform eruption of the intestines, considered by the author a cause of the morbid actions in cholera, is well known to every pathologist as the result of irritation in the mucous follicles of the intestines; and may be seen in most cases of fever, dysentery, and other intestinal diseases terminating in this textural change. The acidity of the exudation from the bowels has been also taken for granted, but Dr. Parkes's examination of the intestinal discharges of cholera shows them to be markedly alkaline.

In prevention of Cholera, Mr. Blacklock, on the ground of his fanciful hypothesis relative to the cause of the disease, recommends "daily doses of sulphur, with a pea diet, from affording sulphuretted hydrogen, as extremely valuable in arresting the ganglionic over-excitement in which the morbid sensations have their origin": but we are extremely sceptical as to the propriety of this advice, and need not further enter on his general system of treatment, which comes not recommended to us by any experience of its efficacy.

Dr. COLLIER'S "Code of Safety" enforces its maxims in the form of aphorisms, which are generally given with good sense, and apparently accurate knowledge of the laws by which contagious diseases spread, and epidemics prevail. Under head 17, it is said with truth, that "contact with the sick, or breathing an atmosphere in common with them, or infection, as it is called, will not of itself cause any epidemical attack; but it may, and often does, concur with other causes in producing the spread of the malady. To say that this or that particular epidemic or endemic disease is or is not contagious or infectious, is vain and equivocal; since a community of habits, and of living, and of sympathies, and of climate or atmosphere, and of planetary influence, and of impress under weather, may assist in developing a pestilence which otherwise would not occur." For information on other points, we refer to the little volume itself.

Under the impression that there are grounds for believing that those affected with Cholera, either by contagion, or by the creation or extension of a cholerаic atmosphere, do communicate the disease, or in some way render others liable to be attacked, it was deemed prudential, during the late prevalence of cholera in Dumfries, to enforce strict isolation of the inmates of the Crichton Institution for lunatics, and cut off all communication between them and the infected locality. The experiment appears to have been attended with most complete success; for while four hundred and thirty individuals died, and a thousand were ill of cholera, in the neighbouring town, the community of the Institution remained free from the prevailing disease, and enjoyed unprecedented health. This general exemption was owing, perhaps, in a great measure, to the superior elevation of the site of the building, which placed its inmates above the stratum of atmosphere which contained the cholerаic

poison. A similar exemption, and under similar circumstances, from the poisonous effects of malaria, is known to take place in the marshy districts of Italy.

It is still premature to sum up these notices of publications on Cholera, while so many new ones are constantly appearing; and till we have had an opportunity of considering various important memoirs, which have recently appeared in foreign countries. In the mean time, we would simply direct attention to the great fact of Cholera being a poison-disease; that it is in the blood that morbid changes first arise; and that it is chiefly from careful and extended researches into the chemical and physical changes which this fluid undergoes, from the contamination of the cholera-poison, that a right bias is likely to be given to our search for a rational system of treatment.

The memoir by Dr. James Bird, (the first portion of which appears in the present number), affords us much accurate information regarding the true nature of the disease; and we have received from Dr. Garrod another important contribution to the pathology of Cholera, which will appear in the May number. To the very valuable communications of Dr. James Bird and Dr. Garrod we beg specially to direct attention.

(To be continued.)

SURGICAL EXPERIENCE OF CHLOROFORM. By JAMES MILLER, Esq., F.R.S.E., Professor of Surgery in the University of Edinburgh, etc. etc. 8vo. pp. 60. Edinburgh: 1848.

This is an entertaining, sprightly, and instructive little book. It formed the substance of three introductory lectures delivered by the author, in November last, at the commencement of his annual course on systematic surgery. This circumstance is pleaded as an apology for the familiar style of the composition.

Mr. MILLER'S pamphlet consists of an historical introduction and twenty-seven brief sections.

The "historical introduction" contains a rapid sketch of the discovery and practice of ætherization in surgery; after which comes an account of Dr. SIMPSON'S search for, and finding of, that which in most circumstances is a better anæsthetic agent—CHLOROFORM. We had often heard of Chloroform parties being fashionable in Edinburgh, but Mr. Miller's graphic picture transported us at once to Dr. Simpson's dining room, whither it may not be uninteresting for our readers to return with us. We therefore quote the passage.

"My friend Dr. Simpson had long felt convinced that some anæsthetic agent existed superior to ether; and, in the end of October 1847, being then engaged in writing a paper on *Etherization in Surgery*, he began to make experiments on himself and friends, in regard to the effects of other respirable matters—other ethers, essential oils, and various gases: chloride of hydro-carbon, acetone, nitrate of oxide of ethyle, benzin, the vapour of iodoform, etc. The ordinary method of experimenting was as follows:—Each 'operator' having been provided with a tumbler, finger-glass, saucer, or some such vessel, about a teaspoonful of the respirable substance was put in the bottom of it; and this again was placed in hot water, if the substance happened to be not very volatile. Holding the mouth and nostrils over the vessel's orifice, inhalation was proceeded with, slowly and deliberately; all inhaling at the same time, and each noting the effects as they advanced.

"Most of these experiments were performed after the long day's toil was over—at late night, or early morn; and when the greater part of mankind were soundly anæsthetized in the arms of common sleep. Late one evening—it was the 4th of November 1847—on returning home after a weary day's labour, Dr. Simpson, with his two friends and assistants, Drs. Keith and J. M. Duncan, sat down to their somewhat hazardous work, in Dr. Simpson's dining-room. Having inhaled several substances, but without much effect,

it occurred to Dr. Simpson to try a ponderous material, which he had formerly set aside on a lumber-table, and which, on account of its great weight, he had hitherto regarded as of no likelihood whatever. That happened to be a small bottle of chloroform. It was searched for, and recovered from beneath a heap of waste paper. And, with each tumbler newly charged, the inhalers resumed their vocation. Immediately an unwonted hilarity seized the party; they became bright-eyed, very happy, and very loquacious—expatiating on the delicious aroma of the new fluid. The conversation was of unusual intelligence, and quite charmed the listeners—some ladies of the family, and a naval officer, brother-in-law of Dr. Simpson. But suddenly there was a talk of sounds being heard like those of a cotton-mill, louder and louder; a moment more, then all was quiet, and then—a crash. On awaking, Dr. Simpson's first perception was mental—'This is far stronger and better than ether,' said he to himself. His second was, to note that he was prostrate on the floor, and that among the friends about him there was both confusion and alarm. Hearing a noise, he turned round and saw Dr. Duncan beneath a chair; his jaw dropped, his eyes starting, his head bent half under him; quite unconscious, and snoring in a most determined and alarming manner. More noise still, and much motion. And then his eyes overtook Dr. Keith's feet and legs, making valorous efforts to overturn the supper-table, or more probably to annihilate everything that was on it; I say, more probably; for frequent repetitions of inhalation have confirmed, in the case of my esteemed friend, a character for maniacal and unrestrainable destructiveness—always, under chloroform, in the transition stage.

"By and bye, Dr. Simpson having regained his seat, Dr. Duncan having finished his uncomfortable and unrefreshing slumber, and Dr. Keith having come to an arrangement with the table and its contents, the *sederunt* was resumed. Each expressed himself delighted with this new agent; and its inhalation was repeated many times that night—one of the ladies gallantly taking her place and turn at the table—until the supply of chloroform was fairly exhausted. In none of these subsequent inhalations, however, was the experiment pushed to unconsciousness. The first event had quite satisfied them of the agent's full power in that way. Afterwards, they held their wits entire, and noted the minor effects on themselves and each other. Though the specimen of chloroform was by no means pure, yet they found it much more agreeable and satisfactory in every way, than anything else which they had formerly tried; and it required no vote of the party to determine, that at length something had been found 'better than ether'. 'The festivities of the evening did not terminate till a late hour'—3 A.M. The latter part of the time, however, had not been devoted to inhalation. The small stock of chloroform having been speedily exhausted, research was busy, among chemical authorities, to find the best formula for making more. The formula was found; the same morning, Mr. Hunter, of Duncan, Flockhart and Co., was pressed into the service of restoring the supply; and from that day and hour there was, for many months, no respite for that gentleman. Working with an ordinary retort, he could not make chloroform fast enough for the consumption of Dr. Simpson and his friends; and relief came only with a better mode and larger scale of production."

The Mode of Administration recommended by Mr. Miller, is with "the handkerchief, lint, or glove,—arranged somewhat after the fashion of a cone, the interior of which suffices to hold mouth and nostrils comfortably,—saturated with pure chloroform, held at the distance of a few inches, and then gradually brought nearer, until mouth and nostrils are fairly included. And then it is held loosely on the face,—unless rapidly changed for an increase of dose,—until the desired stertor and unconsciousness have occurred." Although accidents may not have arisen, from this method of administration, in Edinburgh, it must be remembered that all the deaths from chloroform, mentioned in the discussion in the French Academy of Medicine, occurred

in cases in which the handkerchief had been used. It would therefore appear, that when a suitable apparatus is used, a due admixture of atmospheric air with the chloroform vapour is better secured, and the danger of death from asphyxia prevented. The handkerchief may, of course, be so employed as to give ample entrance to air, yet it requires great care and a constant recollection of the fact, if the patient have not his blood oxygenated whilst inhaling the chloroform, he must of necessity die. We strongly demur to Mr. Miller's instructions, that "the mouth and nostrils are to be fairly included"; but we go along with him in advising atmospheric air as the best restorative. (p. 23.) Quietness, and the avoidance of talking, are recommended, and very properly so: for, with the opposite conditions, much unpleasant excitement may be caused.

ANÆSTHESIA IN DISLOCATIONS, and also in HERNIA, is of much service, wonderfully facilitating reduction, by inducing a state of complete muscular inertia. Mr. Miller gives cases in support of this statement; and since the publication of this pamphlet, he and others have sent accounts of similar cases to the Journals. We propose to return to this subject when we come to speak of the surgical uses of chloroform in the "Digest". Anæsthesia lends much assistance in treating IRRITABLE STRICTURES, and in EXAMINING INJURIES. A thorough manipulation may be made, and a correct diagnosis formed, which, in other circumstances, the dislike or danger of subjecting the patient to pain, might prevent, or render impossible.

LITHOTOMY IN CASES OF DISEASED KIDNEY, may be rendered both warrantable and hopeful, according to the author, by anæsthesia.

"If a stone patient have coagulable urine, which is also purulent-looking, thick, and fœtid; if he be thin, pale, exhausted, and suffer much from pain in the loins—the surgeon is sadly averse to cutting him: for this simple and sufficient reason—'He will die'. That is the ordinary prognosis in such cases; warranted by experience. The risk is, that the shock of the operation will act untowardly on the renal symptoms; and that, by aggravation of these, life will speedily be overborne. By chloroform, is it not more than probable that this risk will be either in great measure or wholly obviated? And, in consequence, may not surgeons be warranted in affording relief, by their art, to patients who otherwise would have been left a helpless prey to the most miserable disease. Formerly, no surgeon would meddle with him, for a two-fold reason; one half selfish, the other humane; risk to reputation, and risk to life. Now, he is cut as another patient; but, if possible, with still greater care; and the result hoped for is, not that the operation, by its primary effect, acting unfavourably on the renal disease, will kill; but that the operation, by its secondary effect, successfully removing the irritating and disease-engendering stone, will act *favourably* on the kidneys, and tend to give the patient a double delivery; first from the stone, and then, more gradually, from renal trouble also. And the same kind of reasoning may also be applied to cases of diseased bladder, complicating calculus. Here is an example to the point. A boy, eleven years old, was admitted, under my care, in the Hospital, on the 29th of January last. Since four years of age, he had suffered constantly from 'stoppage in his water'; but the complaint had become much worse during the last two years. In addition to the ordinary symptoms of stone, he had a wasted, wan, miserable look about him, very suggestive of kidney disease; his water continually dribbled from him, his prepuce was angry and long through much pulling, he stank urinously, and his face wore an unbroken expression of pain. There was pain over the kidneys, as well as in the vesical region; the urine was coagulable by nitric acid and by heat, occasionally bloody, almost always turbid, depositing a white sediment; and this sediment was found to contain both blood globules and pus, besides abundance of the phosphates. A day or two after admission, I made an attempt to sound him; scarcely expecting to find a stone—

so marked was the *renal expression* in the case. Stupidly I did not employ chloroform, and I had at once to desist. The entrance of the instrument caused a shriek of agony; and, clasped tightly by spasm of both urethra and bladder, the sound could not be moved. Some days afterwards, under chloroform, I made a deliberate examination, found a stone of some size, and diagnosed also disease of the bladder's coats; the boy, on awaking, did not know anything had been done to him. The stone detected, the serious question arose—what to do with it? Allow it to remain, and miserably wear out the patient; or remove it by operation, and give the lugubrious chance of permanent relief or speedy death, preponderance bearing strongly on the latter? The result of consultation was—to delay operation in the meantime, and to treat the case medically. This was done; and under the ordinary remedies, both renal and vesical symptoms became very decidedly subdued. Still, however, there remained the pain, incontinence, bad urine, and misery. The boy begged to have the stone away, the friends submitted to the alternative, and, trusting to chloroform (I speak of earthly trusts), I determined on operating; although still dissuaded from it, as a hopeless undertaking, by at least one of my colleagues. On the 12th of April (the boy had thus been nearly three months in probation) I performed the ordinary operation of lithotomy, with full anæsthesia of the patient; and was extremely careful to limit the prostatic incision as much as possible. A stone was removed, composed chiefly of lithic acid, about the size of a walnut, and marvellously rough and sharp on the surface. The boy awoke after having been some time back in bed, felt no pain or distress, and expressed great delight and comfort in the change of condition—of which he seemed to become very speedily aware. The narrative of after treatment need be but short. He never had a bad symptom. On the 17th of May, he was 'dismissed cured'; little or no pain in the back, micturition almost natural, urine still slightly coagulable; fat, plump, rosy, laughing—a very different boy from him who entered the Hospital. Some time since I heard of him, through my friend Dr. Small, whose patient he was in the country; and, I am glad to say, he reported him 'quite well'. Now, without chloroform, or other anæsthetic, I believe that boy would have been this day in his grave; either worn out slowly and miserably by combined renal and vesical disease; or perished, very speedily, under an abortive lithotomy."

Among the other topics discussed by Mr. Miller, are the following:—"Anæsthesia is of unspeakable advantage in saving the feelings of delicacy and modesty in women"; "Chloroform, as an anæsthetic, has a decided advantage over ether"; "In what cases is anæsthesia inadmissible?" "Is life saved as well as pain?" This latter question, the author has no doubt, will ultimately be answered in the affirmative, by statistical inquiries, now in progress.

The pamphlet concludes with the following tribute to Dr. Simpson, "whose rare fortune it has been to introduce this wonderful agent."

"Gifted with talents that are given to few; armed with a zeal and enthusiasm which are absolutely indefatigable; restless and eager; yet withal careful and scrupulous in research for truth; full of a pure and large-hearted benevolence—he has made many discoveries and improvements, in his profession, which are of themselves well capable of transmitting his name safe and honoured to posterity. But all are eclipsed in this, his latest and his best. We admire his talents; we praise his zeal; we rejoice in his success; and while we honour his genius, we love the man.

"And there is one duty more. 'Let us cease not to extol Him who is all bountiful, as He is omniscient and almighty'; who has been graciously pleased, in these latter days, to mitigate in part the temporal punishment which sin had brought into the world; who 'is of great kindness, and repenteth Him of the evil; who retaineth not His anger for ever, because He delighteth in mercy.'"

REMARKS ON CHLOROFORM IN ALLEVIATING HUMAN SUFFERING. Addressed particularly to the Female Sex, showing that there is no Scriptural Authority to interdict its administration for the mitigation of physical pain under any circumstances. By W. H. BAINBRIGGE, Esq. 8vo. pp. 43. London: 1848.

Mr. BAINBRIGGE "addresses himself particularly to the female sex," and insists (as Dr. Simpson had done before), that it is absurd to suppose that the primeval curse is a direct interdict by Heaven, against the use of anæsthetic agents in parturition. We recommend all who are curious on this point, to peruse, along with Mr. Bainbrigge's pamphlet, the very ample and learned discussion of the same subject, by Dr. SIMPSON, in a tract entitled "*Answers to the Religious Objections advanced against the employment of Anæsthetic Agents in Midwifery and Surgery*", published in 1847, by Messrs. Sutherland and Knox, of Edinburgh; and also a more recent pamphlet on the same subject (London, 1848), by Dr. PROTHEROE SMITH, with an appendix by Dr. Simpson.

THE ADVANTAGES OF ETHER AND CHLOROFORM IN OPERATIVE SURGERY. An Address delivered to the Harveian Society, on the 9th of February, 1848. By T. B. CURLING, Lecturer at Surgery in the London Hospital, etc. 8vo. pp. 36. London: 1848.

Mr. CURLING was an early and able advocate in favour of anæsthesia in surgery; and though much has occurred since the date of his pamphlet, to elucidate the properties of Chloroform and Ether, and their advantages and disadvantages in surgical operations, yet there is nothing stated by him which is not entirely in accordance with our present knowledge. "Anæsthetic agents" says the author, "must be prized, not only for their perfect power of annulling pain in all its varieties and degrees of intensity, but still more for their remedial influence in relaxing muscles, lessening constitutional disturbance, and diminishing the mortality of operations."

A POPULAR ESSAY ON ANÆSTHETIC AGENTS FOR PROCURING PAINLESS OPERATIONS, PARTICULARLY ON THE ACTION AND EFFECTS OF CHLOROFORM IN SURGERY AND MIDWIFERY, BUT MORE ESPECIALLY IN DENTAL SURGERY. By WILLIAM HENRY MORTIMER, Surgeon Dentist. 8vo. pp. 32. London: 1847.

Mr. MORTIMER does not recommend the indiscriminate use of Chloroform in operations on the teeth. He says: "Where the patient can submit to the operation without its aid, I certainly think it ought to be dispensed with. Still, I am free to admit that, as I find, upon experience, that it continues to justify all the favourable indications here stated, I shall not any longer offer (as I did with ether) any obstacles to its use, when it is requested, and shall feel myself bound to avail myself of its aid in all complicated cases; for with its assistance, the difficulty of effectually removing deep-seated fangs will be considerably lessened, and the removal of double teeth very much facilitated. I am in hopes that it may prove of great service in another branch of dental surgery, having reference rather to prevention than cure. I allude to the deadening of the nerve, during the process of stopping teeth with gold. The pain attendant on this operation often frustrates our endeavours, and we are either obliged to abandon it altogether, or very ineffectually to perform it."

ON THE USE OF CHLOROFORM IN DENTAL SURGERY. By J. CHITTY CLENDON, Surgeon-dentist to the Westminster Hospital, 8vo., pp. 20. London: 1849.

Mr. CLENDON's pamphlet contains a number of very sensible remarks, the result of experience and reflection. He conceives that the unpleasant effects which are often induced by the inhalation of the vapour of Chloroform have

been too often suppressed or glossed over. For example, the sickness which is so common is not generally mentioned; and this is wrong, because the patient and his accompanying friends may be alarmed at what, if prepared for, they would easily be led to regard, as indeed it is—an unimportant occurrence. The sickness is "seldom accompanied by retching or straining, the food being ejected as readily as the milk from the stomach of an infant." Certain serious inconveniences, arising from anæsthesia, in extracting teeth, are pointed out, and the opinion is expressed, that Chloroform is less adapted for dental than for other kinds of surgical operations. "If," says he, "I were merely to study my own convenience, I should very seldom avail myself of it; and for this very satisfactory reason, I can, in general, easily accomplish all I have to do without it. A few moments suffice to extract a tooth; no preparation is required; and the operation over, there is no further trouble. Should there be any difficulty in the way of its removal, as is sometimes the case, it would certainly not be diminished by placing the patient in a state of insensibility. In the first place, while inhaling, patients, from restlessness, will frequently stretch out their legs and slide down in the chair; at the same time, the head, from their inability to support it, falls forward, or on either side, in a position very inconvenient for removing teeth. From such a posture it would be very desirable to raise them; but, owing to their entire helplessness, this is exceedingly difficult to accomplish, especially if the patient be at all weighty. Fearing the effort might disturb them, I seldom attempt it, but kneel down, so as to place myself on a level with the mouth, and thus proceed to remove the teeth—operating, of course, to a great disadvantage. The teeth, too, are sometimes firmly clenched, rendering it necessary to use some degree of force to open the mouth. This occasions loss of time, and also tends to disturb the patient. A gag placed between the teeth, to keep the mouth open, previous to inhaling, has been suggested. I have tried several contrivances of this kind, and find them more easy in theory than in practice. The very proposition is startling to patients, who, if they comply, generally contrive, intentionally, or unintentionally, to eject it during the inhalation. It is also more difficult to inhale with the mouth wide open: and, even if there were not these objections, it would be found very much in the way in operating. Fortunately, it is not often required: the mouth can generally be opened, and kept so by the insertion of the finger; but I mention it as one of the difficulties which sometimes arise from the use of Chloroform. During inhalation, the mouth becomes filled with saliva, sometimes of a frothy character; and, when one tooth has been removed, the blood which flows, mixes with the saliva, and effectually conceals the remaining teeth or roots from view. The patient being insensible, does not eject this; the blood and saliva continue to flow, and you proceed to remove the remaining teeth or roots, with no other guide than a previous knowledge of their respective situations, and the point of the finger to direct the instrument. Using an elevator under such circumstances, in neither an easy nor trifling affair." The effects produced in one hundred consecutive cases are thus given:—

Excitement, only	3
Consciousness, sensibility, with loss of motor power	5
Struggling during inhalation, and during operation, with insensibility to pain	12
Tetanic contraction of muscles during inhalation, with insensibility	7
Insensible to pain, consciousness retained	9
Unconsciousness, insensibility, with loss of motor power, gradually and quietly endured	64
	100

Mr. Clendon details some cases in which, but for Chloroform, important operations on the mouths of nervously timid persons could not have been

attempted, though their performance was known by the patients to be essential to the preservation or restoration of their general health.

We recommend the pamphlet of Mr. Clendon as giving a very impartial estimate of the advantages and drawbacks connected with the employment of anæsthetic agents in dental surgery.

On the Inhalation of the Vapour of Ether in Surgical Operations: containing a Description of the various Stages of Etherization, and a Statement of the Result of nearly Eighty Operations in which Ether has been employed, in St. George's and University College Hospitals. By John Snow, M.D. Lond. 8vo. pp. 88. London: 1847.

At the date of this publication, Chloroform had not been announced by Dr. Simpson; but, still, as affording a good account of etherization, and as containing a great many general remarks applicable to all of the anæsthetic agents now in use, we consider this pamphlet very important. The value of Ether is well pointed out, in cases in which it was necessary to relieve strictures of the urethra, reduce dislocations, replace herniæ, and keep the patient at rest.

The Brain the sole centre of the Human Nervous System. By Edwin Lee, Member of several of the principal European Medical and Chirurgical Societies. (Read before the Royal Society, May 1848.) Edinburgh: Stark and Co. 1848.

This pamphlet, containing the substance of a paper read before the Royal Society of Edinburgh (*not that of London, as the title-page would seem to imply*), differs from those which ordinarily come before us, inasmuch as it appears under protest against the decision of the council of the Royal Medical and Chirurgical Society of London, which decision was adverse to the presentation of the paper for reading before that Institute. There are other points between Mr. Lee and the council, alluded to with much bitterness, but with them we have no concern, as they are entirely personal. If we might hazard a conjecture as to the cause for rejection of this paper, we should say, that it arose from the communication being little more than a compilation from the opinions and writings of others. Certainly seven-tenths of its substance are made up of such matter, and we cannot say that the small portion which claims originality is, in our opinion, sufficiently remarkable either for novelty, value, or interest, to deserve the importance attached to it by the author.

Dissertation on Scientific Nomenclature, Medical and General, exhibiting the Defects, Anomalies, Errors, and Discrepancies of its present Condition, with Suggestions for its Improvement. By R. G. Mayne, M.D. London: Churchill. 1849. Post 8vo. pp. 82.

The author of this work criticises, with justice, many of the technical and other words in use in scientific nomenclature, and measures them by the standard of classical etymology. That multitudes of terms, scientific and anatomical, are in the highest degree faulty, cannot be denied; but it would be a difficult task, and one likely to lead to much confusion, to alter familiar terms, with which certain ideas are connected, merely to render them more strictly classical. If the language of medicine and of science is to be remodelled, let it be placed on a good foundation, and let the names applied have direct reference to the uses and homologies of parts, the composition of materials, or the characteristics of disease, so that a distinct idea may at once be presented to the mind, in place of the vague notions conveyed by terms, having their origin in the fancy of the old physicians and anatomists. We must, however, admit that the work before us is characterized by great learning and much earnestness; and although it may not succeed in attaining the object in view, it is at all events a step in the right direction.

On the Nature of Limbs: A Discourse delivered on Friday, February 9, at an Evening Meeting of the Royal Institution of Great Britain. By Richard Owen, F.R.S. pp. 119. London: 1849.

The publication of this discourse, immediately after its delivery, was, we presume, for the purpose of obviating any misconception, by imperfect reports, of the meaning or views of the learned author; and after a careful perusal of the work, we think that such a proceeding was judicious.

The subject treated of, is the general and serial homologies of the locomotive extremities of the vertebrate series of animals. It is taken for granted that certain limbs or locomotive members, which, according to their speciality of form, have received special names, are answerable or "homologous" parts; that the arm of the man is the fore-leg of the beast, the wing of the bird, and the pectoral fin of the fish. This special homology has long been discerned and accepted, but the general homology of the parts, or their relation to the vertebrate archetype,—in short, their "*bedeutung*" or essential nature, is not generally known. It is to the solution of this problem that the lecture is devoted.

The Professor first points out the varied forms of the locomotive organs of the vertebrata, drawing a comparison between the pectoral fin of the dugong, the fore limb of the mole, the wing of the bat, and the leg of the horse. Having then taken a view of the formation of the skeleton of the hand and arm in man, he proceeds to compare with it the corresponding limb of the hoofed animals, showing how the same type has governed the formation of both, and how the resemblance is continued in the trowel of the mole and the wing of the bat; the chief change being, that whatever is elongated and attenuated in the bat, is shortened and thickened in the mole. We might at first sight be little prepared to find the full number of joints or segments in the simple burrowing limb of this little animal, much less could we expect them to exist, hidden beneath the undivided sheath of the fin of the dugong or whale! but they are there, the type is still adhered to. In the corresponding fin of the fish, one segment of the arm is abrogated, but still the elements of the hand, the wrist, and the fore arm, are recognizable. In the *Muræna* and *Anguis* the scapular arch alone remains, the appended limb being lost; and lastly, in ordinary serpents and cyclostomous fishes, all trace of both arch and appendage has vanished.

The bilateral symmetry of the body, and the parallelism existing between the skeletons of the fore and hind limbs, are then dwelt upon at length, and the views of Vicq D'Azyr analyzed. An interesting account is given of the modifications and order of disappearance of the digits in various animals, and it is shown that "the high characteristics of the human arm and hand are manifested by the subordination of each part to a harmonious combination of function with another, by the departure of every element of the appendage from the form of the simple ray, and each by a special modification of its own; so that every single bone is distinguishable from another; each digit has its own peculiar character and name; and the thumb, which is the least constant and important of the five divisions of the appendage in the rest of the class, becomes in man the most important element of the terminal segment, and that which makes it a 'hand,' properly so called.

"In the pelvic, as in the scapular extremity, the same digit, which is the first to be rejected in the mammalian series, becomes as it were the 'chief stone of the corner', and is termed, *par excellence*, the 'great toe'; and this is more peculiarly characteristic of the genus *homo* than even its homotype the thumb; for the monkey has a kind of *pollex* on the hand, but no brute animal presents that development of the *hallux*, on which the erect posture and gait of man nearly depend." (p. 37.)

The author then enters at length, with his usual ability, into a consideration of the general homology of the scapular and pelvic arches, but our

space will not admit of our following him through the details; he points out the difficulties which surrounded the theories of Oken, Gœthe, and Geoffroie St. Hilaire, and having displayed their fallacies, puts forward, in the most convincing manner, his own interpretation. The tendency of his reasoning is to the solution of the question, propounded at the commencement of the discourse, that in their relation to the vertebral archetype, the human hands and arms are parts of the head—diverging appendages of the costal or hæmal arch of the occipital segment of the skull, and that arms and legs are developments of costal appendages. They are not ribs that have become free, as defined by Oken, although liberated ribs may perform analogous functions, as in the serpents and the *draco volans*.

The remainder of the Discourse is devoted to the contemplation of the abstract archetype skeleton, and the Professor thus eloquently concludes:

"The archetypal idea was manifested in the flesh under divers such modifications, upon this planet, long prior to the existence of those animal species that actually exemplify it. To what natural laws or secondary causes the orderly succession and progression of such organic phenomena may have been committed, we as yet are ignorant. But if, without derogation of the Divine Power, we may conceive the existence of such ministers, and personify them by the term 'nature', we learn from the past history of our globe, that she has advanced with slow and stately steps, guided by the archetypal light, amidst the wreck of worlds, from the first embodiment of the vertebrate idea under its old ichthyic vestment, until it became arrayed in the glorious garb of the human form." (p. 86.)

We are conscious that our brief abstract by no means does justice to this very profound and suggestive Lecture. It fully sustains the reputation of its distinguished author, and it would not be easy to say more in its recommendation.

The work is illustrated by woodcuts and plates, and elucidated with voluminous notes.

Pathologia Indica, or the Anatomy of Indian Diseases, based upon Morbid Specimens, from all parts of the Indian Empire, in the Museum of the Calcutta Medical College: illustrated by Detailed Cases, with Comments, Physiological, Historical, and Practical. By Allan Webb, B.M.S., Professor of Descriptive and Surgical Anatomy in the Calcutta Medical College. 8vo. pp. 340. 2nd edition. Calcutta: 1848.

The Science of Medicine had scarcely emerged from the obscurity in which the artificial and conventional arrangement of nosological systems, and the dogmas of the schools, had involved it, when men began to perceive that the basis of a more correct method of investigating diseases must be founded on a knowledge of morbid alterations of structure, in relation to the symptoms by which they are indicated. Malpighi, Valsalva, and Morgagni, by their researches and example, took the lead in this career of improvement. They recommended observation and experience, in connecting a close observance of symptoms, during life, with a careful examination of morbid structural changes in the dead body, as the foundation of more exact medical knowledge; rightly instructing their pupils to study nature and collect facts, because, as Malpighi said, "systems are ideal and mutable." The valuable publications, on morbid anatomy, of Dr. Baillie in England, and M. Portal in France, still more recommended, in modern times, this mode of studying disease, so as to obtain a more accurate diagnosis, along with an improved method of treatment. The cultivation, however, of morbid anatomy, on the exclusively organic doctrines of the solids, was pursued without a due estimate of the more important part, which the fluids and deranged constitutional functions perform in the production of morbid structure. The influence of the vital principle, and the change of the fluids, which precede and regulate

the law of textural changes in the various tissues, embracing excess or defect of nutrition, perversion of secretion, and deposition of particular substances, were not sufficiently recognized in the theory of disease, till the publication of M. Andral's *Clinique Médicale*, in 1825; before which time pathology was scarce known as more than pathological anatomy. Since then, pathological research has taken a decided direction towards the humoral doctrines of the older writers—to be conducted for the future, we should hope, with that due regard to analytical and synthetical investigation of facts, which, uninfluenced by the fashion of the day, may secure for medicine the rank of a more exact science than it now enjoys.

Pathology, in this, its most extended signification, if not the sole essential element in a medical education, may be considered as the most important branch of medical knowledge: for without it, as well might the physician endeavour successfully to restore health to the morbid and diseased functions of the human frame, as that he could expect to see regularity restored to the deranged movements of a time-piece, by one unacquainted with its mechanism. Yet equally unreasonable, as such an expectation would be, are the anomalous and presumptuous attempts of the every-day pretender to medical knowledge, who blindly adventures to control the complicated machinery of the animal economy, without any adequate acquaintance with pathology, the most essential branch of his profession. So necessary, indeed, is this study to the successful treatment of disease, that we cannot withhold the expression of our regret that the medical authorities of this country, constituted for the better regulation of medical practice, as applicable to public health, do not make an attendance on pathological lectures, and a knowledge of pathological principles, indispensable to their examination for license. The College of Physicians have, however, introduced into their examinations, this most necessary subject, but without specifying it in their regulations; and understanding it "to comprise a knowledge of such propositions as have a reference to the structure and functions of the human body." The College of Surgeons only require an acquaintance with pathology from those examined for the Fellowship; and no mention is made of it among the requisites for the license by the Society of Apothecaries, which is surprising, considering the really useful and comprehensive education exacted by that Corporation. Six months' study of general pathology is demanded by the Medical Department of the British army; but no such proviso is specified among the qualifications necessary for the East-India Company's medical service: and it is lamentable to think that the acquisition of such essential knowledge is not more insisted on by public departments. It is also most discouraging to remember that the Professor of General Pathology in Edinburgh,—the most ancient and once the most renowned British School of Medicine, should be an alien from the ranks of science—a wavering dabbler in infinitesimal doses.

While we see much necessity for reform on this head, in the public departments, we gladly hail the valuable publication which heads this article as an earnest of the rich harvest of information which we may expect from the zealous co-operation of the intelligent medical officers of the Indian army with their medical brethren in Europe and elsewhere, in instituting a more extended system of investigation into diseases, through every region of the globe.

The present is an improved and greatly extended edition of a work, first published at Calcutta in 1844, giving an account of the pathological preparations in the museum of the Bengal Medical College, the foundation of which was the museum of the Medical and Physical Society there. Professor Webb, on his appointment to the anatomical chair of the medical college, took charge of the pathological preparations in this museum, but without receiving a classified catalogue of them based on any principles of systematic arrangement. Duly estimating the importance of the museum, as connected with the subject of medical education in the college, the Professor's first

care was to classify the various preparations which had been collected, and to describe them in a proper catalogue, "registering facts of practical existence, in order to aid the research and inquiries of officers of the medical service in general throughout India." The mass of facts already accumulated will serve, as he anticipates, "to fix the *pathology of India*, and remove many false impressions that exert an injurious influence upon the practice of medicine in that country," and will also in part supply the absence of books and sources of reference, a want which the young practitioner there but too frequently finds to be matter of deep regret. Had the work no other ground of recommendation than the last, it would alone be sufficient to secure for it the attention of the whole medical profession of India, as being, *cæteris paribus*, a book of very great utility, which ought to be in the hands of every practising medical officer of the Indian army. It has, however, higher and more substantial claims to their consideration, to that of all interested in Indian pathology, and of those desirous of seeing Indian disease treated on the best and surest foundation, clinical illustration of diseases, viz., of the blood-vessels, air passages, heart, lungs, liver, kidney and urinary organs, combined with practical observations on treatment, with reference to the most recent and best-received opinions on the subject.

The work now published is of too great an extent for us to attempt any analysis of its contents, embracing as it does matters of high interest and disputed opinion on various diseases. The pathology of blood lesions, and the history of several epidemic diseases, in which death of the blood corpuscles, and consequent shrivelling of their vesicular envelopes, and loss of their normal respiratory functions, were probably common to all, is illustrated by most interesting comments on the analogy of cholera and the sweating sickness. The ample field which Calcutta affords for investigating the morbid changes of the fluids which occur in cholera, will not, we hope, be left uncultivated by Professor Webb; but that he will be induced to turn it to good account, by giving us a complete chemical analysis of all diseased secretions in cases of cholera. We have only space to admit of one extract, and an important one too, as far as its analogy concerns the primary change that takes place in choleraic blood.

"The action of sulphuretted hydrogen gas is generally admitted to depend on the same poisonous effects as malaria. *But how does it act?* By stopping endosmosis, preventing the pulmonary cell-membrane from either admitting oxygen to the blood, or emitting carbonic acid gas from it. Thus a man may die from it as rapidly *asphyxied*, stifled, as if he were hung or drowned. This is evident from Professor Matteucci's experiments upon endosmotic action. A fact, still more difficult of explanation, is the agency of sulphuretted hydrogen in immediately checking the process. As soon as the least putrefaction commences in the membranous septum, the endosmose ceases, and the liquid returns by filtration; and if a fresh membrane be exposed, even for a short time, to sulphuretted hydrogen, no endosmose will take place through it, even between two liquids ordinarily most energetic in their action on one another. In like manner, the introduction of a very small quantity of sulphuretted hydrogen into the liquids employed is sufficient to retard or check the process, even though these liquids, when pure, are powerful supporters of the endosmotic current."—p. 218.

We cannot do better than recommend this volume to our professional readers.

PATHOLOGY OF THE HUMAN EYE. By JOHN DALRYMPLE, F.R.C.S. Fasciculus 1. Folio. London. 1849.

A characteristic of the present age is the production of illustrated works, far surpassing, in magnitude and beauty, any that have preceded them; and of all the sciences, none have been more assisted in this way than that of

medicine. A series of faithful delineations of diseases of the eye has been long looked for, and much wanted. In no other organ are the phenomena of disease exhibited so lucidly, and in none is the effect of treatment more marked; but the morbid appearances vary according to the tunic or structure attacked, and it requires nice discrimination, with a practised eye, to decide on the nature of the more obscure and insidious cases. With the exception of those attached to ophthalmic hospitals, there are few surgeons who have opportunities of seeing a sufficient number of examples of diseases of this class, to render them familiar with all their Protean phases, and our professional brethren, especially those in the country, must often be sorely perplexed by a description of practice, in which the seat of disease is so delicate, and of functions so important, that a slight error in diagnosis may be attended with lamentable consequences to the patient, and blast the reputation of the surgeon. It is, therefore, with unusual satisfaction that we hail the appearance of this work. The illustrations to most of the books devoted to the speciality of which it treats, are so bad, that they mislead instead of instructing; but any one conversant with the subject will recognize, in Mr. Dalrymple's plates, the most exquisite and accurate delineations of the diseases they are intended to represent. Each number is to contain four plates, and each plate, six illustrations. In No. I we have Chronic Ophthalmia, Lippitudo, Tinea, Pterygium, Symblepharon, Hordeolum, and Tumor Tarsi represented. A short but lucid description of each disease, with the appropriate treatment, accompanies the plates, so that the usefulness of the work is greatly enhanced by the practitioner having presented to him, at one glance, all the information necessary for recognizing and treating diseases of the eye. No one in the profession is better qualified to instruct in this branch of medical science than the author; and his intentions have been most ably seconded by the skill of the artist, and the enterprise of the publisher.

The Homologies of the Human Skeleton. By Holmes Coote, F.R.C.S., Demonstrator of Anatomy at St. Bartholomew's Hospital. Post 8vo. Pp. 100. London: 1849.

The author of this work states, with justice, that osteology has hitherto been unpalatable to the generality of students, principally from the multitude of barren and unconnected facts with which its details have been overloaded; but that the study of Homologies—*i. e.*, of the relations of corresponding parts—which has been brought to much perfection by Professor Owen—will materially simplify the investigation of the osseous system, human, and comparative. The novelty of the homological doctrines rendered necessary some explanation of the terms and principles, in a book intended for students; and Mr. Coote defines them in a remarkably clear manner. He then passes in review the bones composing the human skeleton, arranging them as thirty-seven or thirty-eight vertebræ, with their appendages. In bringing before the profession, in a simplified form, those views which are rapidly and extensively gaining ground, Mr. Coote has shown a correct appreciation of the requirements of the age. The manner in which he has executed his task, we may add, is deserving of much approbation. To those who are desirous of making themselves acquainted with the mysteries of Archetypal Homologies, we can recommend this work as a faithful guide.

CRITICAL DIGEST OF THE BRITISH AND FOREIGN MEDICAL JOURNALS.

ANATOMY AND PHYSIOLOGY.

DISTRIBUTION OF THE NERVES OF THE TONGUE.

The study of the distribution of the nerves to the various parts of the body, has hitherto consisted chiefly in following their course by the aid of the scalpel, so far as they have been easily visible to the naked eye; and their microscopic structure has been observed; but of their final distribution we have little or no account. In the paper before us, published in the *Gazette Médicale de Paris*, December 16th, 1848, of which we purpose giving a brief abstract, M. Bourgery treats of the minute distribution, or "capillary system" of the Nerves of the Tongue. The following nerves are distributed to the tongue on each side:—1, The ninth, or hypoglossal nerve; 2, The lingual branch of the trifacial; 3, The lingual portion of the glosso-pharyngeal; 4, The chorda tympani; 5, Another branch from the facial, which joins the glosso-pharyngeal: 6, A branch of the superior laryngeal; 7, Nerves from the carotid plexus, accompanying the lingual artery. Besides being divided into two lateral halves, the tongue may be considered to consist of an anterior and posterior portion. To the latter are distributed, 1, A portion of the hypoglossal nerve, united with some filaments of the lingual; 2, The posterior internal portion, and some filaments of the anterior external portion, of the glosso-pharyngeal; 3, A branch given off from the facial nerve in the aqueduct of Fallopius, joined to the glosso-pharyngeal; 4, A large branch from the superior laryngeal; 5, A filament from the tonsillar branch of the pneumogastric; 6, Sympathetic nerves from the carotid plexus. In the anterior portion are found, 1, The remaining part of the hypoglossal nerve; 2, The lingual branch of the trifacial; 3, The chorda tympani, united, in man, to the lingual nerve, but remaining distinct in some animals; 4, The anterior external dorsal, and the sub-lingual branch, of the glosso-pharyngeal; 5, The branch from the facial united to the anterior external branch of the glosso-pharyngeal; 6, Nerves from the sympathetic plexus surrounding the facial artery. Of these nerves, the greater portion of the hypoglossal and some filaments of the lingual are alone distributed to the muscular structure, the others to the mucous membrane of the tongue.

1. *The Hypoglossal Nerve.*—After giving off the descendens noni branch, this nerve forms a plexus at the base of the tongue on the external surface of the hyo-glossus muscle, with filaments ftom the lingual and from the sympathetic plexus accompanying the arteries; and these plexuses are repeated on all planes, in the substance of the organ. By the aid of the microscope, M. Bourgery states, he has recognized, *first*, their junction by ganglionic filaments with the plexus accompanying the lingual artery; and *second*, the origin, from the anastomosing arches, of numerous filaments distributed to the muscular structure, and beneath the mucous membrane; the cerebro-spinal nerves, hypoglossal and lingual, being respectively motor and sensory, and the sympathetic filaments presiding over the nutritive functions. Besides the plexus on the hyo-glossus muscle, the following have been observed, formed by the hypoglossal and lingual nerves: 1, In the genio-glossi muscles; and 2, At the extremities of the stylo-glossi. To these may be added, 3, A plexus formed by the hypoglossal and glosso-pharyngeal, in the external portion of the stylo-glossus muscle; and 4, a plexus in the glosso-pharyngeus muscles, formed by the glosso-pharyngeal nerve and the pneumogastric.

These are exclusive of the minute plexuses, which may be discovered, by the aid of the microscope, in every part of the tongue.

The *Lingual Nerve* has a less extent of distribution than the hypoglossal, but is more bulky, in accordance with the common character of the nerves of sensation to be larger in size, but with a less surface of distribution, than those of motion. It is with the internal branches of this nerve, that the hypoglossal forms plexuses on the genio-glossal and stylo-glossal muscles, at the base of the tongue. The *plexus in the genio-glossal muscles* is remarkable for the abundance and extent of its anastomosing filaments. It is composed of, 1, Nerves from the sympathetic plexus, surrounding the lingual artery; 2, The hypoglossal nerve, which here divides into a plexus, formed by eight or ten principal branches, connected by numerous smaller filaments; 3, The lingual nerve, similarly divided, but of a less plexiform appearance. The plexuses are connected on the two sides, and in front they are continuous with those of the stylo-glossi muscles.

Having been thus distributed throughout the tongue in a series of minute plexuses, the hypoglossal and lingual nerves have each their respective final arrangement; the greater portion of the former supplying the muscles, and the latter, for the most part, the mucous membrane.

The following nerves are distributed exclusively to the mucous membrane of the tongue:—The lingual portion of the *glosso-pharyngeal nerve*, the most important of those which are exclusively distributed to the mucous membrane, is divided into an internal and external branch. The internal, the larger branch, is distributed to the parts at the base of the tongue, and supplies exclusively the *papillæ caliciformes*. The external branch, according to M. Bourgery, may be followed with the microscope as far as the point of the tongue. Posteriorly, it forms a plexus with filaments from the internal branch; and from this, according to Valentin, is derived the portion which is distributed to the mucous membrane of the inferior surface of the tongue. Its dorsal branch, the continuation of this portion of the nerve, passes forward parallel to the principal lines of the fungiform papillæ, and expands towards the point of the tongue, where these papillæ abound; hence it would appear to be intended for their supply; but this M. Bourgery cannot positively assert.

The *chorda tympani* is intimately united in man with the lingual nerve; but its distribution has been followed in some animals, in which it is separate, and found to be directed to the dorsal surface of the tongue, to be distributed to the tegumentary membrane. Its function does not appear to have been determined; MM. Bernard and Guarini considering it to be a nerve of motion, while according to MM. Biffi and Morganti, it is a nerve of sensation. This point can only be determined by examining into its real origin.

Another *branch of the facial*, described successively by MM. Richet, Ludovic Hirschfeld, and Gros, is given off in the aqueduct of Fallopius, below the origin of the chorda tympani, and is united with the antero-external branch of the glosso-pharyngeal, with which it forms a plexus around and within the stylo-pharyngeus muscle. It is distributed, with the glosso-pharyngeal, to the mucous membrane, and appears to be a motor nerve.

The *superior laryngeal nerve* of the pneumogastric, according to MM. Cruveilhier and Richet, gives a branch which enters the tongue beneath the internal branch of the glosso-pharyngeal, and is distributed to the mucous membrane as far as near the lingual V.

The *sympathetic nerves*, accompanying the arteries, form numerous anastomoses at all points, with the other nerves of the tongue.

Deferring the consideration of the ultimate distribution of the nerves in the papillary membrane to a future part of his memoir, M. Bourgery gives the following *résumé* of the respective functions of the nerves.

The tongue receives for each of its halves—

1. *Two, or perhaps three, motor nerves*: (*a*) The *hypoglossal*, a large nerve

in proportion to the size of the organ: (*b*) A branch from the facial, presumed to be motor, and anastomosing with the glosso-pharyngeal: (*c*) The *chorda tympani*, supposed by some to be a nerve of motion, by others of sensation.

2. A portion of three *mixed or sensory nerves*, derived from the medulla oblongata: (*a*) The *glosso-pharyngeal*, for the most part a nerve of special sensation, and by which the tongue is placed in relation with the pharynx, fauces, and velum palati: (*b*) The *lingual*, considered by some as the nerve of taste, by others as merely a nerve of sensation; but, at all events, a large branch of the trifacial, the sensory nerve of the fauces: (*c*) A large branch from the pneumogastric.

3. The tongue is richly supplied, in proportion to its size, with *sympathetic nervous plexuses*, accompanying the arteries.

The following is a summary of the manner in which the nerves of the tongue are united with each other:—1. The two nerves of sensation; 2. Each of these with the nerves of motion; the lingual with the hypoglossal and chorda tympani, if the latter be a motor nerve: the glosso-pharyngeal with the other branch of the facial, and with the hypoglossal in the stylo-glossus muscle; 3. The motor and sensory nerves with the plexuses of the sympathetic; 4. The three kinds of nerves on one side are united to those of the other.

The tongue is placed in functional relation, 1. With the motor powers of the "hyo-glosso-pharyngeal apparatus" by the hypoglossal nerves: 2. With the rest of the pharynx, by the glosso-pharyngeal and pneumogastric nerves; 3. With the face, by the facial and trifacial nerves; 4. With the digestive apparatus, by the sympathetic plexuses, and the pneumogastric nerves.

MEMBRANOUS SHEATH OF THE PENIS.

Dr. Gurdon Buck, of New York, describes "a distinct membranous sheath investing the penis, and forming a continuation of the suspensory ligament above, and of the perineal fascia below, which will be best understood by a description of the mode of dissecting it. The penis and scrotum are to be circumscribed at the distance of three fingers' breadth all round, crossing the perineum at the anterior margin of the sphincter. The dissection of the skin and subjacent cellular and adipose tissues is to be made towards the penis, on the level of the fascia lata laterally, and of the perineal fascia posteriorly, and carefully continued on the body of the penis, as far as the corona glandis. An incision is then to be made along the dorsum of the penis, exactly in the middle line, splitting through the suspensory ligament, and extending forwards to the corona, between the dorsal vessel and nerves that run parallel on either side. The adhesions of the sheath along the dorsum are firm, and require careful dissection; the blood-vessels and nerves being raised with it, serve to show the line of adhesion. The dissection being prosecuted laterally as well as inferiorly and at the extremity, the entire corpus cavernosum is enucleated, the muscles of the perineum being raised with the sheath. It is now seen that the suspensory ligament from above, and the perineal fascia from below and laterally, form one continuous membrane with the sheath, enclosing the corpus cavernosum in its cavity, and embracing the corpus spongiosum urethræ between two layers, one of which passes above, and the other below it. The excavated base of the glans adheres inseparably to the outer surface of the sheath, while, by means of its inner surface, it caps the summit of the corpus cavernosum. Its adhesions are most firm at the extremity of the corpus cavernosum, along its dorsal surface, and at the insertions of the erector and accelerator muscles. It is thickest around the corona, along the dorsal surface, and where it forms the suspensory ligament. Zones of vessels run at regular intervals, in the direction of the circumference of the penis, from the dorsal trunk to the

corpus spongiosum, between the layers of the sheath. The cavity formed by the sheath, and occupied by the corpus cavernosum, is limited posteriorly by the triangular ligament. That portion which covers the perineal muscles, and has been described by authors under the name of superficial fascia of the perineum, inferior fascia, and penic fascia, arises laterally from the ascending rami of the ischium, and descending rami of the pubes, as far forwards as the inferior edge of the symphisis, where it forms the suspensory ligament. Posteriorly, it is continued over the transverse muscles, and, folding round their edges, is prolonged upwards into the ischio-rectal fossa. It also sends off, from its upper surface, membranous septa between the accelerator muscles in the middle, and the erectors on each side, to join the triangular ligament; and thus to form three distinct and independent sheaths, that are confounded anteriorly with the common sheath investing the corpus cavernosum. The present statement shews the proper relation of the sheath of the corpus spongiosum and glans penis, which appears to have not been hitherto described by anatomists. The pathological relations, shewn by Velpeau and others to depend on the structure of these parts, with respect to the formation of abscesses, and extravasation of urine anterior to the triangular ligament, are elucidated in this communication. The memoir, of which the above is an abstract, is illustrated by a plate. [*Transactions of the Amer. Med. Assoc.*, Vol. I, p. 367.]

PRACTICE OF MEDICINE AND PATHOLOGY.

CHLOROFORM: ITS USES IN VARIOUS DISEASES. NO. I.

Chloroform has recently been employed in the treatment of various diseases. The following notices, collected chiefly from the medical journals, will give a general idea of the kind of success which has hitherto attended its employment. An alphabetical arrangement of the subjects is adopted.

Asthma. At the Westminster Medical Society, November 27, 1847, Mr. Greenhalgh said that he had exhibited Chloroform, by inhalation of forty minims from a sponge, to a gentleman labouring under attacks of spasmodic asthma, which were generally of some duration. The administration of the dose during a paroxysm almost immediately produced a profound sleep, which continued for two hours; after which the patient awoke, without any of the usual consequences of the attack. Mr. Chandler (*Medical Gazette* for 1847, p. 1106) relates the case of a lady, who was the subject of distressing attacks of spasmodic asthma. In one of these, he resolved to give Chloroform a trial, and accordingly poured half a drachm on a sponge, hollowed to fit the face and nostrils, and held it near the face. Excitement and incoherence were at first produced, with hysterical laughter; but, on applying the sponge close to the face, these were replaced by a state of muscular relaxation and anæsthesia, the respiration gradually becoming more regular. She awoke in about four hours from the state of semi-consciousness produced by the Chloroform, much refreshed; and the following morning, was quite quiet, and had no return of spasm, and no ill effect from the inhalation. The vapour of ether had been previously tried in this case, not only without effect, but with much increase of suffering. M. Lebiche, of Lyons (*L'Union Médicale*, 1 Janvier, 1848), administered Chloroform to a young priest, who was suffering from asthma. Twenty drops were inhaled three or four times during the day, with the effect of removing the symptoms, which, with the exception of a slight return on the third day, had not re-appeared at the end of a week.

Bronchitis. At a meeting of the Westminster Medical Society, November 27, 1847, Mr. I. B. Brown mentioned that he had administered Chloroform by inhalation, to a lady suffering from great restlessness and sleeplessness, with some cough, after the subsidence of an attack of acute bronchitis. It took almost immediate effect, and produced two hours of most refreshing sleep. Restlessness, however, returned on awaking, and continued for some

hours; but afterwards she had good nights, and was free from the symptoms above mentioned.—[*Lancet*, December 4, 1847.]

Catalepsy. Mr. F. Bainbridge, of Harrogate, says (*Pro. Med. and Surg. Journal*, April 19, 1848), that he administered Chloroform to a female labouring under catalepsy, with the effect of producing relaxation of the muscles. The patient soon returned to her former state; but the temporary cessation of the symptoms had permitted the internal administration of medicines, which could not be done before, on account of trismus. From that time her recovery commenced.

Cholera. At page 343, we have already noticed the employment of Chloroform in this disease, by Dr. Wm. Robertson of Edinburgh; and in other parts of the same article the trials made with it are mentioned. The *Medical Times* of August 12, and September 16, 1848, contains reports of two cases of cholera, successfully treated with Chloroform, by Mr. Brady, of Harrow. At the Medical Society of London, on October 23, 1848, Dr. Clutterbuck said, with reference to some cases of cholera which had occurred at the Lunatic Asylum at Peckham, "that the administration of Chloroform had been productive of the greatest benefit. The spasms and pain were almost immediately relieved, and the patients became composed, and enjoyed a kind of sleep. These results took place after the use of the Chloroform for about a quarter of an hour. The effects, so far, had been immediately and uniformly good. He considered it much to be preferred to opium, for the relief of the painful spasms attendant upon Cholera." Mr. Garrett described some of the cases in the Asylum at Peckham, in which Chloroform had been given. Some of them were of the most malignant kind; and the patients must have died in the stage of collapse, had not assistance been at hand. The attack came on very suddenly, and all the worst symptoms of the disease immediately developed themselves. Brandy and capsicum were first administered; Chloroform was then resorted to, and appeared to be beneficial in producing reaction. By forced respirations the pulse rose, and by the time the patient was under the influence of Chloroform, the body was warm. [*Lancet*, October 28, 1848.] At the same Society, on November 27, 1848, Dr. Clutterbuck said that "the Chloroform, in all the cases which had occurred, had sustained the character which had been given to it at first; and it was invariably and uniformly successful in relieving the more severe and painful symptoms. He did not regard it a cure for the disease; but it arrested the more imminent symptoms, and gave the patient time to rally out of the stage of danger." A Member mentioned a case in which the inhalation of Chloroform had been used, with success, to relieve most painful cramps in the extremities; they were unconnected with cholera. [*Lancet*, December 2, 1848.] The *Lancet* of December 23, 1848, contains an abstract of a tabular statement, by Dr. Hill, resident medical officer of the Peckham House Asylum, of the cases of cholera which had occurred in that institution up to the 21st of November. There appear to have been 54 cases, of which 38 recovered, and 16 died. In addition to Chloroform, brandy, calomel and opium, acetate of lead and opium, and numerous other remedies were employed; but to Chloroform Dr. Hill chiefly attributes the recoveries. In a communication to the *Lancet* of Feb. 10th, 1849, concerning the cases of cholera which recently occurred at Tooting, Mr. Popham remarks, that "Chloroform was tried, and though two or three cases in which it was administered recovered, I look on it as useless in the stage of collapse. It certainly lessens the vomiting in mild cases. In the cases where I administered it, it had the effect of increasing the number of respirations from 25 to 36 in a minute, after its influence had been continued an hour: the pulse also increased gradually, in the same time, from 110 to 124, and became stronger; and the heat of the skin was also augmented. Chloroform may perhaps be a valuable auxiliary in the treatment of cholera, but by itself it is not to be depended on, though so highly extolled by the medical gentlemen at Peckham asylum."

Dr. Moffat, of North Berwick, observes (*Lancet*, November 18, 1848),

"1. Chloroform, by inhalation, should be used at the commencement of the attack of Cholera; and, in order that the patient may have the full benefit, it should be applied at the earliest moment after seizure, for if the strength be exhausted by vomiting and purging, it cannot be of much avail, the anæsthesia acting only by retarding and preventing the disease, not by curing it when once formed. The state of anæsthesia should be kept up for a considerable period in every case; of course the length of time to be determined by circumstances. Should there be any reappearance of the disease when the patient comes out of the anæsthetic state, Chloroform should be again instantly applied. After supposed recovery, the patient should be carefully watched for some time, for the disease will often recur in the most insidious manner.

"2. During the time the patient is in the anæsthetic state, particular care should be taken of the body, and the most minute symptoms noted; and when necessary, remedies must be applied. The body must be kept warm, and the circulation in the extremities assisted by gentle friction.

"3. Whenever possible, the patient should be Chloroformized in a well-ventilated apartment, free from currents of air, and away from all noise and disturbance. The body to be placed in the horizontal position, or with the head a little up. All tight clothing must be removed, as it is of the greatest importance that perfect freedom should be given to the circulation.

"4. The usual remedies, such as brandy, opium, etc., should constantly be at hand, and given when their use may be required."

In the same journal for January 20, 1849, Dr. Moffat relates the following case: A house-painter from Dunbar, about fifty years of age, was seized, about eight in the morning, with the usual symptoms of cholera. He was seen by Dr. Moffat at five P.M. The extremities were cold, the body blue; not the slightest pulsation could be felt in either arm, and the vomiting, purging, and cramps, were absolutely fearful. Twenty-five drops of laudanum were given, which were instantly vomited up. Chloroform was then administered by inhalation. He fell gently back, the vomiting ceased, and he lay quite calm. In twelve or fifteen minutes he came out of the anæsthesia, and looked placidly around him, but in a few minutes more he began to feel the pains and cramps in his legs, and cried out for more of the Chloroform, at the same time eagerly catching hold of the Chloroformed handkerchief, and applying it to his mouth. Anæsthesia was again induced, and kept up, more or less, for four hours, during which time the body was kept warm by a load of bed-clothes, bottles of hot water, etc. A little brandy, camphor, etc. were occasionally given. From that moment every symptom ceased, and he is now quite recovered. There can be no doubt, we think, that by some the benefits of Chloroform in cholera have been greatly overstated; and we are inclined to think that Dr. Wm. Robertson's estimate of it (p. 344) is correct—viz., that it does much for the *comfort*, but nothing for the *cure* of the patients.

Chorea. Mr. W. D. Emmett, of Darlington (*Lancet*, March 4, 1848), says, "I have used Chloroform in a case of chorea, and with decided effect, the muscular movements being almost magically arrested, though the benefit was not permanent." Mr. F. H. Harris, of Botesdale (*Lancet*, June 3, 1848), employed Chloroform in the case of a patient, aged 17, labouring under chorea, which seemed unrelieved by the use, for ten days, of tonics and purgatives. He commenced by administering it for half an hour every day during a week, with the effect of arresting the muscular movements, and producing calm sleep. The excitement of the muscles returned, though in a less marked degree. During another week, he administered Chloroform daily for an hour or an hour and a half, and, the other usual remedies having been persisted in throughout, and continued a few days after leaving off the Chloroform, the patient became perfectly convalescent.

Convulsions (Infantile). Mr. Sabine relates (*Boston Medical and Surgical Journal*) the case of an infant, five months old, labouring under most severe and unremitting convulsions. A few inhalations of Chloroform were

made, when the muscles became relaxed, and the breathing was free and easy. The pulse, which was before absent, now became perceptible: and, in about three minutes, consciousness returned. No unpleasant effects followed the use of the Chloroform.—[*Prov. Med. and Surg. Journal*, May 31, 1848.]

Convulsions (Puerperal). Dr. Gros (of St. Marie aux Mines) has employed Chloroform in a case of convulsions after delivery. Bleeding, calomel, and opium, and sinapisms to the extremities, had been tried without success for six hours, when Dr. Gros administered about ʒiss of Chloroform, by means of a handkerchief. A state of anæsthesia, with relaxation of the limbs, and quiet breathing, was produced, and continued for ten minutes; after which the convulsions recommenced. Chloroform was again administered, which produced anæsthesia for a quarter of an hour. On awaking, the patient was more calm, and afterwards slept for more than an hour. The night was passed well, and there was no return of convulsions, nor any symptoms of puerperal peritonitis or mania; convalescence was rapid. [*Bulletin Général de Thér.* Jan. 15, 1849, as quoted in *l'Union Médicale*, 6 Fev. 1849.] The editor of *l'Union Médicale*, in quoting the above case, very justly remarks, that the number of cases of puerperal convulsions in which Chloroform can be used, is limited by the predominance of cerebral congestion. In the present case, bleeding had been practised three times before it was administered. In all cases, it would be well to practise blood-letting before employing anæsthetics. At a meeting of the Westminster Medical Society, on January 13, 1849, Dr. Snow, in answer to a question by Mr. Harvey, said, that he had not had any opportunity of giving Chloroform in puerperal convulsions himself, but he believed that it might be safely tried in most instances, and its use need not prevent that of blood-letting or other remedies. There was no uncertainty in the action of Chloroform; the quantity required could always be ascertained exactly by observing the effects; and it was attended with no risk whatever, in the hands of medical men who had paid attention to its effects and mode of administration. In the *Medical Gazette* for Feb. 11, 1848, Mr. Fearn, of Derby, is stated to have administered Chloroform to a young woman of seventeen, with puerperal convulsions. The affection was first treated by bleeding and turpentine enemata. The use of the Chloroform was successful; but it is a question whether it would have been admissible before the bleeding.

Delirium Tremens. Mr. J. B. Warwick, of Southwell, Notts, relates (*Lancet*, January 15, 1848) a case of delirium tremens in its most aggravated form, in a woman 45 years of age. She had been delirious for 24 hours, requiring three or four persons to hold her in bed. Morphia, ammonia, camphor, calomel, and turpentine injections, were tried for a day, without producing any amelioration of the symptoms, which seemed rather to increase. Chloroform was administered by inhalation, and produced sleep for ten minutes; it was then again administered, at intervals of a quarter of an hour, for two hours. The pulse had fallen from 100 to 80. With the last dose, 100 drops of laudanum were given. Sound sleep succeeded for three hours, after which recovery rapidly progressed. Mr. Hooper, of New Peckham (*Lancet*, April 1, 1848), administered, by inhalation, a drachm of Chloroform to a patient labouring under delirium tremens. From being very noisy and unmanageable, in two minutes he dropped off into a quiet sleep, which continued for twenty minutes, when he awoke calm and rational. With the exception of another paroxysm in the course of the next morning, the patient subsequently went on improving. Mr. S. L. Gill, of Stepney, administered Chloroform in a similar case, which had resisted the influence of opium. Sleep was produced for two hours, and followed by a state of composure, lasting for six hours. The symptoms of delirium returning at the end of that time, opium and other remedies were had recourse to with benefit. [*Lancet*, June 3, 1848.] M. Bocamy, of the Civil Hospital at Toulon, relates the case of a patient addicted to intemperance, who had a wound below the right eye-brow. Violent delirium set in on the fourth day, and continued for three days, unre-

lieved by antispasmodics and opiates. Chloroform was administered, and anæsthesia produced; after which the patient became calm. [*Gaz. Méd. de Paris*, 17 Mars, 1849.]

Dysentery and Infantile Cholera. Mr. T. Hewlett relates, in the *Provincial Medical and Surgical Journal* for November 15, 1848, three cases of the above kind, in which he administered Chloroform with success. It was prescribed in the form of a liniment, with turpentine and soap liniment (eight minims of Chloroform to the ounce), to be rubbed into the abdomen and back; and also as a mixture, containing m. vi of Chloroform, 3iv of mixture of acacia, m. vi of tincture of opium, and water to ℥i: a teaspoonful to be taken every two hours. These proportions were for children from fifteen months to two years old. In another severe case of dysentery, occurring in a boy aged about eight years, and which had resisted all remedies, a mixture consisting of ten minims of Chloroform, with twelve grains of inspissated ox-gall, and some laudanum and almond emulsion, was prescribed, and a sixth part given every four hours. Under this treatment, with occasional doses of Dover's powders, the child speedily recovered.

Dysmenorrhœa. Dr. Henry Bennet (*Lancet*, February 19, 1848) has administered Chloroform by inhalation, in dysmenorrhœa, co-existent with chronic uterine inflammation, with the effect of allaying the severe pain occurring at the menstrual periods. In two cases in which he tried it, it failed to produce effect. In some instances its use was followed, for two or three days, by "extreme muscular debility, and nervous irritation; the patient being languid, disinclined to move, and agitated at the slightest noise." Dr. Bennet considers Chloroform, in cases of dysmenorrhœa from structural disease, to be only a temporary palliative to pain, and not a radical remedy. He has also given it with benefit in various forms of uterine pain; as in a case where a leech had fixed itself in the cavity of the cervix. In some instances he has employed it before or after cauterizing the cervix uteri.

Enteralgia. The *Révue Médicale* for November 1848, quotes from *La Verdad* for September, the reports of two cases of this description, successfully treated by Chloroform. The first was a case of a man, aged 36, who had been the subject of enteralgia for six months. The Chloroform was administered in doses of about four drops, gradually increased to ten drops, every quarter of an hour. The second case was that of a woman, aged 30, who was attacked with severe nervous colic. The administration of about three drops of Chloroform in a mild vehicle produced almost instant relief; the pulse improved in fulness and strength, and the heat of skin, which had been low, was restored. A repetition of the remedy soon effected a cure.

Hiccup. In the case of a gentleman, forty-six years of age, of weak constitution, and highly nervous temperament, M. Latour employed Chloroform during a very severe attack, which had lasted during three hours, the convulsions of the diaphragm occurring at intervals of six or eight seconds. A bottle containing Chloroform was applied to the nostrils, and removed after a few inspirations. At the first removal, a temporary cessation was produced, and three applications of the Chloroform bottle entirely put a stop to the paroxysm. [*L'Union Médicale*, 30 Dec., 1847.]

Hydrophobia. Mr. R. Y. Ackerley of Liverpool, relates (*Lancet*, July 29th, 1848) a case of hydrophobic mania, attributed to the bite of a cat ten or eleven years previously. Indian hemp and other remedies having been given without effect, and the spasmodic contractions of the muscles having extended to the limbs, conjoined with furious delirium, Chloroform was administered. This put him to sleep in about three minutes, and he awoke again in three-quarters of an hour, much more calm, and with deglutition improved. The Chloroform was repeated in the evening, four ounces of infusion of senna having been administered, and a blister applied over the scalp in the mean time. In the night, the hydrophobic symptoms increased in severity. The next morning, the Chloroform was again administered, and he remained quiet throughout the day, sleeping at intervals; it was again

employed in the evening. Emaciation being very marked, he was ordered wine and brandy, with arrow-root and beef-tea. On the following day, he was again worse. Tartar emetic, with croton oil, were rubbed over the spine, ice was applied to the head, and the Chloroform repeated. In the evening, the symptoms were somewhat improved, and Chloroform was again administered. On the two following days, Chloroform was administered night and morning, with chloric ether, ammonia, and camphor mixture internally. From this time, improvement was rapid. Chloroform was administered occasionally, with tonics and stimulants; and, in about a fortnight, he was quite well.

Hysteria.—Dr. Ossieur mentions, in a Belgian medical journal, that he succeeded in moderating the attacks of epileptoid hysteria in a young lady, by the internal administration of Chloroform. He had in vain tried assafœtida, lactuca sativa, and opiates, when he prescribed two drops of Chloroform to four ounces of *mistura acaciæ*, a tablespoonful to be taken every half hour. The patient fell into a sound sleep before the mixture was exhausted, and was calm and composed on awaking, without experiencing any of the usual unpleasant sequelæ of opiates. The next attack was much shorter in duration; and when, some time afterwards, another attack came on, no Chloroform was given, in order to make a comparative experiment. It proved a very intense fit, and lasted thirty hours. The fits evidently depending on the absence of the catamenia, *pilulæ aloes et ferri* and mustard foot baths were used with the Chloroform. Menstruation soon after appeared, and all the other symptoms vanished. [*Lancet*, November 25, 1848.] Dr. Pigeolet administered to a young woman, who was subject to attacks of hysteria from the slightest cause, twelve minims of Chloroform, to be taken in the course of two hours. When an attack occurred, the patient used the remedy, and sleep was procured before the whole quantity had been taken. [*Gaz. Méd. de Paris*, Fev. 3, 1849.]

Lumbago. M. Moreau (of Tours) employed Chloroform, with marked benefit, in several cases of lumbago, by means of poultices. [*Gaz. des Hôpitaux*, Jan. 13, 1849.]

Nephralgia.—In the case of a patient subject to paroxysms of nephralgia, which usually lasted for 48 hours at a time, M. Lériche, being called to visit him in an attack which had lasted ten hours, caused him to inhale twenty minims of Chloroform. At the end of a minute the pain had ceased, but returned in a short time, when Chloroform was again administered with like success, and a grain of opium given. In about two hours there appeared to be perfect freedom from pain, and sleep was procured by the aid of opium. [*L'Union Médicale*, Jan. 1, 1848.]

Neuralgia. M. Lériche (*L'Union Médicale*, 1 Janvier, 1848), relates the case of a patient suffering from neuralgia of the cervical plexus. The attacks came on at intervals of one or two months, and lasted several days, in spite of the remedies employed. On one occasion, M. Lériche administered about fifteen or twenty drops of Chloroform on a handkerchief. The pain was instantly removed, and the patient remained free for two hours, when it was again removed by a similar inhalation. Dr. Contal, of Vezelise, employed friction with Chloroform in several cases of neuralgia. One was a case of facial neuralgia on the right side. Twenty-three drops were rubbed in, which procured relief for two hours; after which the pain returned, but with less intensity, and was relieved by the application of ten drops. A third application of the Chloroform was required during the night, after which there was no return of the neuralgia. In another case, there was intercostal neuralgia on the right side. Fifteen minims of Chloroform were rubbed in, and produced relief for half an hour. The pain then returned in the breast, but was entirely removed by friction with ten drops. In a third case, erratic rheumatic pains had become fixed in a severe form, in the left intercostal region. They were totally removed after the sixth friction. The local application of Chloroform, in these cases, produced either a slight and transient burning sensation, or

of a very cold body being applied. [*Gazette des Hôpitaux*, Feb. 3, 1849.] In a case of dental neuralgia, arising from caries of a molar tooth, Dr. PIGEOLET applied a drop of Chloroform to the affected tooth, with the effect of relieving the pain. [*Gaz. Méd. de Paris*, Feb. 3, 1849.]

TETANUS. The *Union Médicale* for November 30th, 1847, contains a report of a case of tetanus in the practice of M. VELPEAU, at the Hôpital de la Charité. The vapour of ether was employed without any effect. Chloroform was several times administered by inhalation, with the result of producing sleep; but, each time on the patient awaking the tetanic rigidity and convulsions returned, and the case terminated fatally. MR. W. H. CARY, of Woodford, Essex (*Lancet*, February 19th, 1848), relates a case of idiopathic tetanus (emprosthotonos) occurring in a child nine years of age. After purgatives, opium, ether, and other remedies had been ineffectually tried, finding, on the sixth day, that loss of power in articulation and deglutition was supervening, and that the diaphragm was rigidly and painfully contracting, he determined to use Chloroform. Forty minims were accordingly administered; in two minutes, she was narcotised, and the sleep continued for seventeen minutes. The spasm slightly returned: Chloroform was again administered, and produced sleep for three hours. It was repeated in the evening, to allay some slight return of the spasms. She slept well during the night, and awoke well in the morning, in which state she continued up to the date of the report. Mr. WELCH (*Lancet*, March 4, 1848), gives an account of a case of combined hydrophobia and tetanus, in which Chloroform was unsuccessfully applied. The patient, a boy, ten years of age, had received a laceration of the upper lip, which produced tetanus. On admission, a drachm of Chloroform was administered by inhalation, which produced convulsive action and symptoms of pulmonary congestion. In about twelve hours, during which time, notwithstanding the use of tincture of opium, and the external application of extract of belladonna, general tetanic symptoms had set in with severity, hydrophobia began to manifest itself. These symptoms increased, and he died next evening. In a case of tetanus, supervening five days after an injury of the ring finger of the right hand, a portion of the first phalanx of which had been torn off by machinery, Chloroform was successfully administered by Mr. R. L. BAKER, of Birmingham. Sleep was produced in three minutes from the commencement of the inhalation. The effect was kept up for three-quarters of an hour. In an hour after, the patient awoke, with the free use of his limbs, and entered into rational conversation. Six days after, some slight convulsive twitches having recurred, the finger was amputated. The patient was doing well at the date of the report. Mr. WORTHINGTON, of Lowestoft, relates the case of a sailor admitted into the Infirmary of that place, with fracture of both bones of the leg. Tetanus set in on the tenth day. Chloroform was administered; a remission of the symptoms was produced; but the patient died asphyxiated, in a paroxysm of tetanus, thirty-three hours from the commencement of the attack. [*Prov. Med. and Surg. Journal*, April 19th, 1848.]

TYPHUS FEVER. In the *Lancet* of Jan. 29th, 1848, a case, occurring at the Bristol General Hospital, is recorded, in which a female about eighteen years of age, exhibited all the symptoms of bad typhus. The patient being delirious, and the system worn out by want of sleep, it occurred to DR. FAIRBROTHER, that Chloroform, by its sedative effect, might reduce the rapid circulation of blood through the lungs, and subdue the excited state of the nervous system. It was accordingly administered, by inhalation from a sponge, at first in doses of ten minims, for ten minutes, and gradually increased to twenty-five minims for forty minutes, every four hours. The first dose produced soporific effects, and gradual improvement resulted. All other medical means (which had been found ineffectual), were omitted; the body was sponged with tepid water, and cold pads were applied to the head. The system was supported with beef-tea, porter, wine, etc., and toast-and-water was given to allay thirst. The patient recovered.

[*To be continued.*

PATHOLOGY AND TREATMENT OF SENILE DEAFNESS.

(Continued from p. 278 of last number.)

Case vi. Mrs. F. O. died of gangrene at the age of 62. She had been deaf for some time, especially in the left ear.

Dissection. *Right Ear.* The membrana tympani is unusually concave, and, in consequence, its internal surface, about the central part, is not more than a quarter of a line from the promontory. The membrane is also, in parts, rather opaque, especially at its circumference; its internal layer is white and slightly thickened. The mucous membrane of the tympanic cavity is rather thicker and more vascular than is natural, and it is very tough. A firm band of adhesion connects the cervix of the malleus to the long process of the incus, and another membranous band of adhesion connects the anterior surface of the long process of the incus with the promontory and with the stapes, which latter bone it completely envelopes. The tensor tympani muscle is of diminished size. *Left Ear.* Although the surface of the membrana tympani is smooth, it is very white around the line of attachment of the malleus; the blood-vessels are enlarged, and they are much distended with blood. The membrana tympani is much more concave than natural. The cavitas tympani is three parts filled with a thick, tenacious, white mucus, which is partly the cause of the white appearance of the membrana tympani, though the inner layer of the latter membrane, being opaque and white, aids in producing this effect. The mucous membrane lining the tympanum is thick and very vascular, and that portion of it, which covers the body of the incus, is red, the vessels being completely distended with blood. The upper wall of the tympanum is very thin and translucent; the blood-vessels contained in it are distended with blood, and connect the vessels of the mucous lining of the tympanum with those of the dura mater; the latter membrane being more vascular than natural. The tensor tympani muscle is atrophied, and tension of the membrana tympani is not produced by pulling it. The concavity of the membrana tympani seems to have been produced by a gradual contraction of the tensor tympani muscle.

Case vii. Mrs. L. B. died of consumption at the age of 80.

Dissection. In each ear the membrana tympani is somewhat thickened, and membranous bands of adhesion connect the incus and the stapes with the walls of the tympanum. The vestibule is full of a rather turbid fluid, and the membranous labyrinth is thicker than natural.

Case viii. Mr. S. D. died of inflammation of the bowels at the age of 74. He was slightly deaf for a short time.

Dissection. *Right Ear.* The membrana tympani is rather opaque, and thick about its central part. *Left Ear.* The membrana tympani and the mucous membrane of the tympanum are thickened.

Case ix. Mrs. D. E. died with dropsy at the age of 69. She had been deaf for some time.

Dissection. *Right Ear.* The membrana tympani is white, and there is a quantity of thick mucus in the tympanum, the mucous lining of which is also white. *Left Ear.* The membrana tympani is thicker than natural. The mucous membrane lining the tympanic cavity is thick, and the latter is full of mucus. The carotid canal is partially closed.

Case x. Mrs. E. B. died at the age of 68; she had for some time been deaf in the right ear.

Dissection. *Right Ear.* The membrana tympani is white, and the mucous membrane of the tympanic cavity is so thick as to bury the stapes, and nearly wholly conceal it.

Case xi. Mrs. L. R. died of asthma at the age of 70; she had been deaf for several months in both ears.

Dissection. The only pathological condition discovered was a collection of cerumen in the external tube of each ear.

Case xii. Mr. M. S. died at the age of 70; he had been deaf in the right ear for a considerable period.

Dissection. *Right Ear.* The membrana tympani presents a large orifice, the result of ulceration. There is also ulceration of the membranous lining of the external tube. The mucous membrane of the tympanum is healthy.

Case xiii. Mrs. N. O. died at the age of 90; she had been deaf in the left ear many years.

Dissection. *Right Ear.* The mucous lining of the tympanic cavity is thick, and the stapes is concealed by adhesions. *Left Ear.* The membrana tympani is so much drawn inwards as to be nearly in contact with the promontory; where it looks towards the external meatus, it is so concave that a pea would lie in it. The tympanic cavity is full of bands of adhesion, which encircle the ossicula, and connect them with the internal wall; the cavity of the vestibule appears to contain less fluid than natural.

Case xiv. Mrs. D. S. died of fever at the age of 73. She stated that so long as she could remember, she had been troubled with a discharge from the right ear; she had become deaf in the left ear only at a recent period.

Dissection. *Right Ear.* The membrana tympani presents a large orifice at its central part; the remaining portion is thick and white. The mucous membrane lining the tympanic cavity is very thick, and is concealed by purulent matter. The stapes is adherent more firmly than natural to the circumference of the fenestra ovalis. *Left Ear.* The membrana tympani is thick, opaque, and softer than natural. The mucous membrane of the tympanum is thick, and the cavity contains mucus.

Case xv. Mrs. G. C. died from gangrena senilis at the age of 79; she had been deaf for several years; the disease commenced by a succession of attacks of ear-ache.

Dissection. *Right Ear.* The membrana tympani is white, and thicker than ordinary parchment, to which it bears a great likeness. The mucous membrane of the tympanic cavity is thick, and the base of the stapes is firmly anchylosed to the circumference of the fenestra ovalis. *Left Ear.* In the same state.

Case xvi. Mr. R. D., æt. 65, died of dropsy. He had been deaf for some time.

Dissection. *Right Ear.* The membrana tympani is rather opaque; and it is connected to the stapes by membranous bands. *Left Ear.* The meatus externus is full of cerumen mixed with epithelium. The membrana tympani is white, thick, and drawn inwards so as to be very concave, and its internal surface is in contact with the promontory, to which it is attached by firm adhesions. The cavity of the tympanum is nearly obliterated by the approximation of the membrana tympani to the inner wall of the tympanum. The stapes is entirely concealed; the tendon of the tensor tympani muscle is completely enveloped by the thick membrane, and the substance of the muscle is much atrophied. The incus has been removed by absorption, and part of the malleus has also disappeared. The upper wall of the tympanum is very thin, the bone is brittle, and the dura mater separates from the bone with greater facility than natural.

Case xvii. Mrs. F. B. died from pneumonia at the age of 70. She had been deaf in the right ear for some time.

Dissection. *Right Ear.* The external meatus is filled with a dark-coloured thick pus, which seems to have been secreted by the external surface of the membrana tympani. The membrana tympani is very soft, and so concave that its inner surface is in contact with the inner wall of the tympanic cavity of the stapes, to both of which it is firmly adherent. The malleus is but slightly connected to the membrana tympani; the long process of the incus and its orbicular process have been wholly absorbed. The mucous membrane of the tympanum is very thick. The upper bony wall of the tympanum is thick and diseased, showing the effects upon it of chronic inflammation of the mucous membrane lining its inferior surface. From its cranial surface, a small rough exostosis projects, to which the dura mater is very firmly adherent. The posterior surface of the petrous bone also shows

symptoms of chronic inflammation. The mastoid cells contain a large quantity of dark-coloured mucus. *Left Ear.* The membrana tympani has commenced to undergo calcareous degeneration.

Case xviii. It could not be ascertained whether the patient was deaf during life, but there can be very little doubt that she was so. Mrs. E. N. died of phthisis at the age of 65.

Dissection. *Right Ear.* A transparent band of adhesion connects the membrana tympani posteriorily with the long process of the incus; and the base and crura of the stapes are joined by numerous firm bands to the circumference of the fossa fenestræ ovalis. *Left Ear.* The inner surface of the membrana tympani is connected with the long process of the incus and with the head of the stapes, by transparent but firm bands of adhesion, which nearly conceal the stapes, and firmly bind it to the promontory. The membrane surrounding the articulation of the incus and the stapes is so thick and tough, that the two bones required for their separation considerable force. Besides the adhesions connecting the stapes to the promontory, the membrane connecting the base of the stapes to the fenestra ovalis is much more firm than natural; so that, in endeavouring to separate the stapes by means of the forceps, the crura were fractured, and the base of the bone remained firmly adherent to the fenestra ovalis."

In addition to the dissections related, Mr. Toynbee has made others of the ears of fifty-one persons, who were more than seventy years of age at the time of death. Of these one hundred and two ears, *sixty-two* were in a diseased, and *forty* in a healthy state. These dissections are included among the 915 cases which form the groundwork of a paper[1] now before the Medico-Chirurgical Society of London.

Treatment. The most frequent pathological condition in the ears of elderly deaf persons, consisting in a thickened state of the mucous membrane, the presence of bands of adhesion, and a thickened condition of the membrana tympani—any one of which circumstances is sufficient to prevent the passage of sonorous undulations from the membrana tympani to the expansions of the auditory nerve—it is highly important to inquire, whether any remedial measures can be suggested? Mr. T. believes, that not only may the thick membrana tympani be relieved, but the thickened mucous membrane be so reduced, and, in some cases, the bands of adhesion so far relaxed, that their presence will offer scarcely any impediment to the function of hearing. He uses solution of argenti nitras, of from half a drachm to two drachms, to an ounce of distilled water. Proceeding from the exterior orifice, the passage may be touched to an extent varying from one-half to two-thirds of its length every third or fourth day. In some cases, the membrana tympani also may be washed with a solution of argenti nitras, of six grains to the ounce. Where the noises are loud, and the symptoms indicate much congestion in the ear, leeches should be applied immediately *below*, not *behind*, the ears; and, where there is irritation of the external tube, an ointment, composed of half a drachm of pulvis cantharidis added to an ounce of simple ointment, and applied behind and below the ear, either daily, or every other day, will be found beneficial. Alterative doses of pilula hydrargyri, hydrargyrum cum creta, or the hydrargyri bichloridum, are very useful; but so gentle should be the alterative, that no sensations should suggest to the patients that they are under a course of medicine. Patients should be cautioned to avoid warm close rooms, and sitting very near the fire; no wine should be taken, unless diluted with water; daily exercise, and, where possible, on foot, should be taken in the open air; together with a warm bath every week or ten days. This course of treatment has been productive of the greatest advantage in several cases of deafness of a most unpromising character, treated by Mr. Toynbee, and published by him in the *Edinburgh Monthly Journal* for March, in which Journal the above originally appeared.

[1] Pathological Researches into the Diseases of the Ear.

DR. MARSHALL HALL ON THE NECK AS A MEDICAL REGION, AND ON PAROXYSMAL PARALYSIS.

The following is an abridgment of two papers which appeared in the *Lancet*, of February 17th, and March 17th, 1849:—

When I contemplate the nervous, vascular, and muscular structures of the neck, with their relative positions and varied functions, I am astonished that, in their *physiological actions*, they never interfere materially with each other. An athletic person may carry an enormous weight on his head, accurately balanced by the action of the muscles of the neck, without the slightest interference with either the nervous or vascular structures so diffusely and variously spread over this region.

But let *pathological action*, the result of emotion, or excito-motor energy, occur, and then interruption of the course of the blood, and nervous action, the most dire and terrific, ensue. The *larynx*, *pharynx*, and *œsophagus*, belong to this region, and contribute their influence to the *Class* of morbid phenomena, of which it is the seat.

As remoter organs intimately associated with the pathological actions of the structures in the neck, I must chiefly notice the medulla oblongata and the cerebrum, on the one hand, and the lungs on the other; and especially in their varied relations to comatose, spasmodic, and asphyxial affections.

To the surgeon, the *arteries*; but to the physician, the *veins* of the neck are the chief objects of interest. If the latter be morbidly compressed, and their blood impeded in its course from the encephalon, many diseases of the utmost moment are the result.

The larynx and trachea may be said to present objects of the deepest interest both to the physician and surgeon, being equally the seats of disease and of accident—of medical treatment and of surgical operation.

The physician has only to observe the various movements of the eyeball, of the features, of the tongue, of the lower maxilla, of the neck, of the larynx, of the pharynx, etc., to arrive at the conclusion, that in the various spasmodic diseases there is no muscle which may not become, singly or together with others, the subject of spasm. It is doubtless to some obscure movements of this kind observed in the countenance, the neck, the fingers, etc., in infants, that nurses have given the designation of "inward fits".

In estimating the value of this subject, we must bear in mind the principle which has been already enunciated—viz., the difference between the well-balanced and harmonious *physiological* actions of the neck, and the abnormal, morbid, and discordant actions of these same muscles in disease, with their *pathological* effects on the subjacent or contiguous structures. Let us contemplate in this manner the effect of morbid and irregular action of the platysma-myoides, and of the cleido-mastoid and omo-hyoid muscles, on the subjacent external and internal jugular veins respectively. I can impart no idea of the interest attached to a careful observation of the condition of these *veins*, and thence of the capillary vessels, and of the arteries; in a word, of the whole *arrière* circulation, in cases of morbid action of the muscles of the neck. The different points in the cephalic circulation should be examined with as much care as the pulse. The neck should be laid bare, the under eyelid everted, and the temporal artery carefully felt. One anxious mother could *foretell* the epileptic seizure in her daughter, by observing the fulness of the veins of the neck. One lady observed these veins occasionally to acquire the size of her finger. A medical gentleman drew my attention to the congested condition of the conjunctiva of the under eyelid in his own case. Many patients have presented a cord-like tension of the temporal arteries. All these phenomena constitute links of the same chain; the first link being compression of the venous trunk by the irregular contraction of the muscle or muscles seated immediately above it; and the last, perhaps, a paroxysmal threatening or seizure.

It may be laid down as a principle, that there is no muscle—no set of muscles—in the neck, which may not become spasmodically contracted, and that there is no vein in this region which may not, under the influence of such contraction of muscles, become compressed, and the course of whose blood may not be impeded or arrested. The effect of interrupted return of blood along the external jugular is, from its connexions being superficial, far more observable than that of a similar interruption in the internal jugular or vertebral, which can often only be inferred from the symptoms.

I now proceed to consider this subject more especially in regard to certain characteristic affections of the nervous system.

We have all heard much of the *tendency* of blood to the head, and we have scarcely heard of *impeded return* of blood from the head. There is no principle in physiology which could induce or explain *tendency of blood to the head*. M. Poisseuille has irrefragably shown that the power of the heart is equal in all the blood-vessels of equal size, and of equal distance from the heart. Nothing can influence this force except position, exercise, or muscular effort, or hypertrophy of the heart itself, which may augment the rapidity and force of the circulation; but then this augmentation of the rapidity of the circulation is general and diffused, like its original force, equally in all the vessels of equal size and form, and at equal distances from the heart. Widely different is the course of *impeded flow of the blood* along the veins. An individual vein may be compressed, and the flow of blood along its course, and its return from the organ in which it originates, is impeded; the capillary vessels, or, as I would term them, the methæmatous channels, are gorged and congested, and the arteries become rigid and throb. This is of daily occurrence.

We have only to watch the condition of the platysma-myoides, and of the external jugular vein, to observe that the contraction of that muscle is frequently spasmodic, and the dilatation of the vein, and of the veins which lead to it, a constant effect. Spasmodic action of the muscle, then, may tend to the obstruction of the course of a vein, and to consequent congestion of its roots, and of the blood-channels, to which it serves as a drain. All the muscles of the neck may be summoned into *normal* action of the most energetic kind, as in carrying a heavy load on the head, without producing this effect. But let this action be *abnormal*, and without equipoise, and a very different result is observed; the subjacent vein may be compressed, and all the consequences of such compression may occur,—viz., distention of its roots, and of the blood-channels, placed intermediately between them and the corresponding branches of arteries, which latter become rigid and throbbing.

Another pathological principle must be adduced in this place. Let any any one observe the eyes, the countenance, the tongue, the neck, the hands, &c., in spasmodic disease. They will be satisfied that there is no individual muscle, no series of muscles, which may not be excited into abnormal and violent, because spasmodic action. There is consequently no vein within the influence of such action which may not be compressed. As a further consequence, there is no organ which delivers up its blood to such vein, which may not be the seat of congestion, and, if I may so express myself, of the apopletic state.

Now, in the region of the neck there are *four* veins of vast importance in this point of view; these are—

1. *The External* } *Jugulars;*
2. *The Internal* }
3. *The Vertebral;*
4. *The Subclavian.*

Now, the external jugular is compressed by the action of the platysma-myoides; the internal jugular, by that of the cleido-mastoid and the omo-hyoid muscles; the vertebral and the subclavian veins may be compressed, and the course of the blood in them impeded or arrested, by the spasmodic action of the scaleni, the subclavius, the pectoralis minor, &c. To show the influence of abnormal contraction of the muscles on the subjacent or adjacent

veins, I may mention the fact, that even the pulse of the artery at the wrist may be stopped by violent voluntary action of the pectorales minores, and other muscles similarly seated. The compression of each of these veins induces its own peculiar effect. The external jugular is frequently compressed by the action of the platysma-myoides, the effect of emotion, and blushing is the consequence; in other cases, the superficial veins of the neck, face, forehead, temples, &c., are seen to become tumid, the face to flush, and the temporal arteries to throb. The internal jugular may be compressed without any obvious external sign, its roots being deeply seated. But the brain suffers, and there may be one or more of the varied symptoms of *cerebral* epilepsy—that is, momentary loss of consciousness, affection of the vision, or ringing in the ears. If the vertebral vein be obstructed, there are some of the symptoms of affection of the medulla oblongata, or of *spinal* epilepsy—that is, laryngismus, strabismus, odaxismus, twisted neck, etc. Lastly, when the subclavian is compressed, the hand of the patient becomes livid and cold.

Some action of this kind also doubtless affects the mamma and the nipple, under the influence of what is called "the draught," and of the erectile excitement of the nipple on the pressure of the lips of the infant. Other glands may be affected in a similar manner, excited, or arrested, by similar means, especially the salivary.

Compression of the subclavian vein may affect, not the brachial vein only, but, in a secondary manner, the vertebral and the jugulars; and it is to be particularly borne in mind, that the veins of this region are not affected *singly* in the manner I have described, but variously together. It is not by any regular and physiological convulsion, but by irregular abnormal and violent *grouping* and *contraction* of the muscles of the neck, that compression of the veins of this region becomes variously affected with its consequences.

I have now to evolve a fourth pathological principle in relation to this subject. The actions of the muscles to which I have adverted being one and all spasmodic or convulsive, the effects of this on the veins, and more remotely on the cerebrum, or on the medulla oblongata, are—*paroxysmal*. And this remark leads me to mention, in the most emphatic manner, that not only coma in the apoplectic state, but hemiplegia and partial paralysis, and mania, may, as well as epilepsy itself, be paroxysmal, be dependent on intra-vascular congestion, and exist entirely independently of extra-vascular, or other physical change. They may be evanescent, therefore, and so, far, very far, less grave than other forms of these diseases. This subject, in all its relations to its causes, its rationale, its prognosis, is of vast importance in medical science.

Emotion and *causes of reflex action* may induce contraction of the muscles of the neck—*trachelismus*. This may compress the veins of the neck, and induce a condition which may be designated *phlebismus*. This leads to congestion of the intermediate blood-channels and the apopletic state; and this, primarily, or secondarily, to comatose, to paralytic, to maniacal, to epileptic affections, all having the one characteristic feature—that of paroxysmal and evanescent forms. I imagine that this view of the subject is equally original, important, and extensive. The events of each day's practice prove that these paroxysmal forms of diseases of the nervous system, not formerly viewed as paroxysmal, are extremely frequent. In fact, I believe a new ray of light is being shed on apoplexy, and even on paralysis and on mania, in their varied forms,—in a word, on a *whole Class* of paroxysmal diseases.

What are the exciting causes of trachelismus and its phenomena? I answer, first, emotion; and second, the excitants of reflex action—new subjects of investigation and study in the science and art of medicine. I am quite aware that neither the professional nor the public mind—they are, indeed, nearly on a par—are raised sufficiently for views so "rational." But, then, I do not write for the present day; and the day will come—and I shall promote its advent—when medicine will form a Science, based on physiology,

and calling in the aid both of theory and of observation. These fountains of science will be viewed as allies, not as opponents, and we shall have our Adamses as well as our Hinds, even in medicine.

There is no degree or form of apoplexy or mania which may not be paroxysmal, and dependent on trachelismus. This is also true of paralysis. One patient suddenly and completely lost the power of articulation at one time, and of writing at another, to recover them after an interval. Another patient lost the power of articulation; a second, the use of the arm, and a third, the use of both arm and leg, yet only for a time. In most of these cases, but not in all, the paralysis is not only paroxysmal, but more or less combined with spasm—that is, they are not cerebral only, but spinal.

Apoplexy, paralysis, mania, have alike resulted from an epileptic seizure. Minor degrees of the former have occurred from milder degrees of the latter; and even in the entire absence of epileptic symptoms. But to the physiologist there is a bond of union between them all. All may equally, and conjointly or separately, arise from emotion or the excitants of reflex action; from the occasional effects of these inducing contractions of the muscles of the neck, of this on the veins, of this again on the capillary circulation, of this on the condition of the cerebrum, and of the medulla oblongata—whence the class of PAROXYSMAL, CEREBRAL, and SPINAL DISEASES.

I must make one further remark on the structure of the veins of the neck. These are so provided with valves at their conjunction with the subclavian, as to cut off the influence of the venous circulation in the fore-arm and arm. Without this provision, each energetic use of the anterior extremity, as when the blacksmith raises his heavy hammer, or strikes with violence on the anvil, would be attended by a blow or shock to the cerebrum, or the medulla oblongata.

The termination in *itis* is become generic, and denotes the fact of the inflammatory character of the disease. A similar use may be made of the termination in *ismus*, which may be applied to another class of diseases, not inflammatory, viz., strabismus, laryngismus, pharyngismus, cheirismus, podismus, etc.

The term *trachelismus* may be used to express that paroxysmal affection of the neck, in which, the muscles acting inordinately, the neck is affected with opisthotonos, or becomes twisted, or otherwise contorted; whilst the subjacent veins are subjected to compression, and the blood flowing along them is arrested or impeded in its course—a condition which may be aptly termed *phlebismus*. The term phlebismus may be regarded as generic, and each kind of this affection may have its appropriate and specific designation; and whilst the term *sphagiasmus* denotes compression of the internal jugular vein, that of *rhachiasmus* may be used to denote that scarcely less important event of interrupted circulation in the rachidian or vertebral vein. The former will be henceforth associated with paroxysmal apoplexy, paralysis, mania, etc.; the latter with the epileptic seizure, and other convulsive and spasmodic affections, the cerebrum and the medulla oblongata, being affected respectively. Trachelismus and phlebismus constitute one of the most important events in *pathology*, and especially in the pathology of the nervous system. Induced by mental emotion and excitants of reflex action, they are, in their turn, the fruitful source of *congestion* in the *cerebrum*, or in the *medulla oblongata*, and of *cerebral* and *spinal paroxysmal diseases*.

There is no *order*, no *degree*, in which the muscles of the neck may not act, and in which the veins of the neck may not be compressed; there is no form of cerebral and spinal paroxysmal derangement—from a momentary oblivium or delirium to coma or mania—from the slightest spasmodic or paralytic affection to epilepsy or hemiplegia—which may not take place as consequences of that compression. Having the limits of these maladies clearly before our eyes, we may readily comprehend the intermediate forms, mild and

dire. To trace these maladies from their faintest to their darkest shade—to trace them back to their causes, moral and physical, and onwards, to their dire effects on the intellect and on the limbs, of excitement or of stupor, of spasm or of paralysis, through trachelismus and phlebismus—is to engage in the investigation of one of the most novel, varied, and practically useful subjects in the domains of pathology. From mere sick head-ache, to paroxysmal apoplexy, or epilepsy, this *Class* of diseases extends, occupying with its varied forms the lengthened interval.

A remarkable confirmation of these views is afforded by the phenomena presented by *Strangulation*. The moment the cord is tightened round the neck, *apoplectic* insensibility takes place; as a subsequent phenomenon, we have *epilepsy*,—the tongue is protruded and bitten in some cases, and there are erection and seminal emission in others; *asphyxia* terminates the dreadful series of events. It will be plain, from what has been said, that we cannot concur with the eminent physician of Edinburgh, that "strangulation, when the neck is not dislocated, appears to be simply apoplexy." In slighter degrees of strangulation, there are slighter effects, but amongst these there is always insensibility. A boy mentioned by Zitzilius, as quoted by Abercrombie, had drawn his neckcloth remarkably tight, and was whipping his top, stooping and rising alternately, when, after a short time, he fell down apoplectic. The neckcloth being unloosed, and blood being drawn from the jugular vein, he speedily recovered. We are all acquainted, too, with the recorded phenomena of Thuggee: the kerchief is tightened, and consciousness, and every mental and physical power, are extinct in a moment. Similar effects have been observed in animals. The first Monro suspended a dog by a cord, excluding the trachea: insensibility was produced, but not asphyxia. There is another fact of the same kind. The horse is subject, when drawing against the collar, to what is termed the megrims (hemicrania). In one such case witnessed by my friend Mr. H. Smith, the external jugular vein, having been previously opened, burst out bleeding.

A more distinct experiment of Sir Astley Cooper is the following:—

"In one rabbit I tied the jugular veins on each side of the neck. When it was set at liberty, it ran about, cleaned its face with its paws, and took green food. Its respiration was reduced to 68 inspirations in a minute, which is about half the natural number. After four hours, it ran about as if nothing had happened, and eventually recovered. When it was killed and injected, I found on each side three anastomosing veins passing from the anterior to the posterior part of the jugular veins, and conveying the blood from the head to the heart; but the vertebral vein had remained whole, and become enlarged; and it passed on the fore-part of the vertebræ, from the head to the space between the fourth and fifth cervical vertebræ, where it entered the vertebral canal.

"In a second rabbit, I tied the jugular veins on each side of the neck, as before. The animal's respiration became slow; but it ate green food, ran about, and was difficult to catch; but for five days after it appeared dull; its ears had dropped. On the seventh day, it was seen to be convulsed, and frequently rolled over. Its voluntary powers were lost, as well as the sensation, in a great degree. On this day it died. On examination, a clot of blood was found extravasated in the left ventricle of the brain.

"Hence, it follows, that apoplexy will occasionally result from an obstruction to the return of blood in the jugular vein; and this I have known to happen from enlargement of the glands in the neck of a boy."—*Guy's Hospital Reports*, vol. i, p. 471.

To these observations I may add the following interesting extract from Abercrombie, to show at once the importance and the obscurity of the subject, previous to these inquiries. After having spoken of the effects of strangulation, and of the "numerous examples in which persons fall down suddenly in a state of perfect apoplexy, and very speedily recover under the

appropriate treatment, without retaining a trace of so formidable a malady," he adds :—"The apoplectic attack, as it occurs in such examples as these, must be supposed to depend upon a cause which acts simply upon the circulating system of the brain, producing there a derangement, which takes place speedily, and is often almost as speedily removed. *What the precise nature of that derangement may be, is a point of the utmost difficulty to determine.*" Abercrombie's philosophic mind felt, in all its force, the want of some such principle as it is the object of these observations to set forth.

A slight degree of trachelismus leads to the feeling of "strangulation", or of "constriction", or of "tightness", or "pressure", or "fulness", about the neck ; for these and other phrases are used by patients. In inquiring into these feelings, we must avoid leading questions, and make the patient express himself. "Do you experience anything unusual about this part ?" (referring to the front of the neck generally) is the only question I ever allow myself to ask. The reply to this is frequently of the most unexpected and interesting kind. The subjects of trachelismus and phlebismus bring under our review the cases of paroxysmal apoplexy, paralysis, mania, and epilepsy, in all their shadowy and terrific forms. In their causes, their nature, their effects, and their treatment, they present to the physician a field of investigation, equally uncultivated hitherto, and prolific in results. A chief cause is *emotion*. Such was the cause of the epileptic attack experienced by Henry Kirke White ; and in general, I believe, the mental agitation, the hopes and fears attendant on the examinations for honours at Cambridge, are far more dangerous than the intellectual efforts previously made ; and I would strongly and loudly urge on the Senate of that famed University (and others) some other, and better, and more continuous mode of judging, than the *one* fearful and dangerous trial now adopted. These effects must be carefully distinguished from those of inflammation and of organic lesion, and the task of an accurate diagnosis is not an easy one.

It has been admitted, from time immemorial, that mental agitation and passion, and deranged condition of the stomach, liver, bowels, etc., induce apoplectic attacks. I only attempt, for the first time, I believe, to set forth the *rationale* of this pathological phenomenon. In doing this, I establish a *class* of *paroxysmal* diseases of the nervous system, cerebral as well as spinal ; apoplectic and paralytic, as well as epileptic and convulsive. I endeavour to fix the attention of physicians, and of patients too, on this, the *curable* stage of these dire maladies, before, from being merely paroxysmal derangement, they pass into permanent lesion of tissue. This is *living* pathology as contrasted with the results of morbid actions as usually detailed in books, which are *dead*. If we read over the titles of each of the nine *Letters* of M. Lallemand, we find but a list of the capita mortua of the real and living disease. But what actions led to each of these ? This is *the* one question, with those of the diagnosis and of the treatment, which interests the physician and the patient.

Treatment.—The causes (all mental emotion, agitation, passion,) must be most carefully avoided ; all sources of gastric and intestinal irritation must be removed. I believe the most specific preventative to be systematic walking exercise, and especially a pedestrian tour. I am convinced that I have seen the best effects from a light mercurial conjoined with ipecacuan and squill, and an aperient, taken so as gently to affect the mouth and act on *all* the secretions and excretions, the mercurial cachexia being prevented by air and exercise. The head should be kept cool by a lotion, consisting of one part of alcohol and three of water, the feet guardedly warm and dry. Sinapisms should be applied to the nape of the neck, extending to behind the ears. Dry cupping, and cupping with simple or crossed incisions, and with the detraction of the appropriate quantity of blood, have proved most useful. But this is rather the treatment of the permanent effects of congestion. The most important treatment consists in avoiding the exciting causes of trachel-

ismus, and its effects. It is obvious that, if we would save the brain, the intellect, and the limbs, we must deplete the veins!

To recapitulate:—what shame does to the face, neck, and breast, through the contraction of the platysma myoides on the external jugular, other agitations and passions, and excitants of reflex action, effect on the cerebrum or medulla oblongata, or both, by the compression or obstruction of the internal jugular or vertebral. The former is seen, the other is deduced from the symptoms, consisting of paroxysmal, cerebral or spinal seizures. If repeated, the cerebral or spinal veins, or the intermediate blood-channels between these and the arteries, become dilated or varicose, or yield an effusion of serum—whence persistent forms of the same diseases. Of these, the first should be subdued, the second averted, by prompt, and effectual cupping.

In subsequent papers, I propose to treat chiefly of a parallel between Inflammation and Congestion of the Nervous Centres.

ANEURISM OF THE CORONARY ARTERY.

Dr. Peacock, Physician to the Royal Free Hospital, has recorded at length the particulars of a case of this very rare disease. He has also, in the same paper (*Edin. Monthly Journal*, March 1849), collected the published cases of this affection: viz., 1. Case of an old soldier, detailed by M. Bougon. The right coronary artery was aneurismal for an inch and a half from its origin. (*Bib. Médicale*, tom. xxxvii, 1812): 2. Case of an old currier, described by M. Peste. There was dilatation and aneurism of the left coronary artery. (*Archives Gén. de Médecine*, 4me serie, tom. ii, p. 472): 3. Case of a man forty years old, related by Hedland, and referred to by Otto; which proved fatal by rupture into the pericardium. (*Otto's Path. Anatomy, translated by South*, p. 319; quoted from the *Svenska Läkara Sällskapets Handlingar*, vol. iii, p. 181): 4. Case briefly noticed by Merat, who states that he had observed "an erosion of the coronary artery, which had given rise to a pouch formed in the thickness of the left auricle, which would have contained a small nut". (*Article, Cœur [Pathologie], Dictionnaire des Sciences Méd.*, tom. v, p. 484). See also a paper by M. Aran, in which the cases of Bougon, Peste, and Merat, are quoted, in the *Archives Gén. de Médecine*, 4me serie, tom. xiv.

Dr. Peacock's patient (Richard Appleton, aged 51, a butcher) was admitted into the Royal Free Hospital on the 2nd of Dec., 1847. It was ascertained that he was of very irregular habits, and for the last month had been so ill as to be incapable of following his employment, and had, in consequence, received parish relief. He had had rheumatic pains, but not, so far as could be ascertained, rheumatic fever. He boasted of the great weights which he had been in the habit of carrying. He had long had a severe cough, and had suffered from difficulty of breathing. He was much emaciated. From torpid state of mind, he could not give any account of his previous state. The pulse was 144, and extremely feeble. The tongue was red at the edges. Treatment produced apparently some alleviation of the symptoms; but for the details, we must refer to the original paper. On the 12th of December, the following occurs in the report:—"Loud sonorous rhonchus, with sub-crepitation, existed in all parts of the chest; and in the region of the heart, and along the course of the sternum, a peculiar sound was heard, exactly comparable to that produced by beating egg with a spoon or fork. This sound was very distinct about the middle of the sternum, and on the right side of that bone, while it was imperfectly audible in the situation of the apex. It was double in its character, and seemed rather to replace, than to be added to, the natural sounds." He died on the evening of the day on which these observations were made.

Necropsy on the afternoon of the following day.

The Brain displayed old thickening and opacity of the arachnoid mem-

brane on the superior surface of the hemispheres, and adhesions between that membrane and the pia mater. The amount of fluid in the ventricles and at the base was trivial. The substance of the organ was healthy. Both Lungs, especially the right one, were emphysematous in front, and nearly covered the pericardium. The posterior, and especially the inferior, parts of both lungs were much engorged and loaded with frothy serum, so as scarcely to crepitate when compressed. The bronchial tubes were dilated, and contained much muco-purulent fluid; and the mucous membrane was reddened. The degree of injection of the membrane, and the amount of secretion, increased as the tubes diminished in size, and were most marked in the lower lobes. The left lung was most engorged. The Pericardium was distended by pale yellow-coloured sero-purulent fluid, and its surfaces (both attached and free) were covered by layers of lymph of a soft consistence and delicate lace-like texture. On the auricles the effusion was more flocculent, while on the ventricles it was more solid and laminated. The subserous cellular tissue, over all parts of the heart, was extensively infiltrated with serum and pus; and the muscular substance was softened. At the upper and outer part of the front of the left ventricle, there existed a protuberance about the size of the half of a walnut, which, like the rest of the surface, was covered by a layer of lymph, and beneath this by a patch of white false membrane of old date. On bisecting this projection, it was found to be an aneurism of the left coronary artery.

The Aneurism was situated on the anterior branch of the artery, at a distance of thirteen French lines from the origin of the vessel from the sinus of Valsalva, and ten lines from the point at which it divided into its two primary branches. It was of a nearly spherical form, and had a diameter of eight and a half lines. Externally, it was covered by the pericardium and the layer of false membrane before mentioned, and internally it was imbedded in the wall of the left ventricle.

The aneurism was filled by coagula, arranged in laminæ, some of which were partially decolorized; and the coats on the external side were so extremely thin, and so intimately connected with the outer layers of coagula, as to be inseparable from them. The sac was entire, and the artery communicated with it at its posterior side, somewhat obliquely, the distal portion of the vessel being displaced by the tumour, so that a probe could not be passed from the canal of the artery above the aneurism, into the vessel beyond it. The orifice of the left coronary artery was considerably dilated, and its calibre, from its origin to the seat of the aneurismal sac, was much increased. Its coats were converted into a solid cylinder of bone; beyond the aneurism, the vessel was less diseased. The right coronary artery was somewhat dilated, and its coats were, in places, studded with cretaceous plates.

The Heart.—The tricuspid and pulmonic valves were healthy. Both ventricles were dilated. The cavity of the left ventricle was prolonged and expanded at the apex, and the muscular substance was there extremely soft, and a coagulum, partly decolorized, adhered firmly to the endocardium. The aortic valves were somewhat thickened and adherent at their angles, but were competent; and the mitral valve was healthy. The aortic aperture admitted a bulb thirty-six French lines in circumference, and the orifice of the pulmonary artery, one of thirty-nine lines. There was thickening and opacity of the lining membrane of the left auricle. The Aorta was lined by a distinct layer of lymph over a considerable extent of its ascending portion, and the serous membrane was much reddened. There were several patches of atheroma around the origins of the coronary artery, and in other parts of the aorta.

Dr. Peacock remarks, that this case presented the characteristic symptoms of the influenza which prevailed at the time of the patient's admission, viz., extreme prostration of strength, and great muscular debility. The extensive

capillary bronchitis, the pericarditis, and endocarditis, were also occasionally present in the severer class of cases. "It may be doubted," says Dr. Peacock, "whether the aneurism of the coronary artery exerted much, if any, influence on the fatal result; the accumulation of coagula in the aneurismal sac, and the consequent obstruction of the artery, having probably taken place only within the last periods of life." In explanation of the rarity of aneurism of the coronary arteries, Dr. Peacock refers to the researches of Dr. Norman Chevers, in *Guy's Hospital Reports*, 2nd series, vol. i, p. 103, and vol. v, p. 40. If the lining membrane of these vessels be raised, a strong band of longitudinal fibres is exposed, which is very largely developed around all parts of the canal. A provision of this description must tend materially to defend the coronary arteries from dilatation, and especially partial dilatation. Indeed, a sacculated aneurism seems only likely to be formed after the rupture of the longitudinal fibres. Thus we can understand, that while fusiform dilatation of the origins of the coronary arteries is occasionally seen, and, under long-continued obstruction at the right side of the heart, the coronary arteries throughout their whole course may be enlarged, yet that of true circumscribed aneurism there are only three or four recorded instances.

Dr. Peacock considers that there are no data from which rules for the detection of aneurism of the coronary arteries can be deduced. The peculiar sound which he heard, he thinks was due to the beating of the heart, in the large amount of thickish fluid contained in the pericardium; and that the presence of the emphysematous lung, in front of the distended pericardium, was also concerned in its production.

TREATMENT OF DIABETES.—MR. C. F. PALMER'S SUBSTITUTE FOR BREAD.

A newly discovered substitute for bread, adapted for diabetic patients, is announced, and as it is commended to the profession by Dr. John Percy of Birmingham—a gentleman who is a good chemist as well as a good physician—we augur well for its success as an adjuvant in treating a class of cases, generally so very disheartening to the practitioner. We quote entire Dr. Percy's communication to the *Lancet*. (March 17, 1849).

"It appears to be now generally admitted, that in the treatment of diabetes mellitus, amylaceous matter should, in a greater or less degree, be excluded from the diet; but, as is well known, under such restriction of food, the diabetic patient soon becomes weary of the ordinary kinds of azotised matter, as beef, mutton, etc., hence various substitutes for common bread have been proposed. Some years ago, my friend, Mr. Morson, of Southampton-row, London, prepared, at my request, specimens of bread containing gluten in various proportions, but it was only relished by the patient when it contained a considerable quantity of starch; and when the proportion of gluten was increased beyond a certain amount, it became so tough and tenacious as to be extremely disagreeable. I have also made trial of gluten bread prepared at Paris, whence it was brought by Mr. Morson, but with no better success. Recently, Dr. Prout has published a receipt for a kind of bread devised by his patient, the late Rev. S. Rigg (vide *Stomach and Renal Diseases*, fifth edition, p. 44), and this is probably the best substitute for common bread which has hitherto been produced. Some time ago, Mr. Charles F. Palmer of this town, prepared for me, with great care, specimens of bread from Dr. Prout's receipt, but patients to whom it was given complained of some difficulty in swallowing it, owing to the large quantity of bran which it contained. Mr. Palmer then suggested the use of the matter of rasped potatoes, left after the complete removal of the starch by washing, to replace the bran. He carried the suggestion into practice, and produced a kind of bread which I think deserves the attention of the profession. It has been

employed in the General Hospital in this town, especially by my friend Dr. James Johnstone, and also by several private practitioners, with decided advantage. In composition it may be considered as Mr. Rigg's bread, in which the bran has been replaced by the residual matter of the potatoes abovementioned, and in the fact of its being rendered light and porous by hydrochloric acid and carbonate of soda, precisely as is the case with Dodson's unfermented bread.

"I here introduce Mr. Palmer's receipt:—Take the ligneous matter of sixteen pounds of potatoes, washed free from starch; three-quarters of a pound of mutton suet; half a pound of fresh butter; twelve eggs; half an ounce of carbonate of soda; and two ounces of dilute hydrochloric acid. This quantity to be divided into eight cakes, and, in a quick oven, baked until nicely browned. It is, as must be obvious, an expensive article, but with many diabetic patients this will not be an object of consideration. It is somewhat improved in taste by being slightly toasted. At first, gum arabic, in sensible quantities, was introduced into this bread, on the ground of the assertion of Professor Graham, that when that substance is taken by a diabetic patient, the proportion of sugar evolved from the system is not thereby increased, and that, consequently, it might probably supply matter for pulmonary oxidation. However, it was found that it rendered the bread tenacious and disagreeable, so that its use was subsequently abandoned. I wish it to be understood, that whatever merit there may be in the production of this bread, is entirely due to Mr. C. F. Palmer. My friend, Dr. Evans, has suggested, and I think with reason, that the bread might probably be improved by the addition of a certain proportion of bran; and, accordingly, Mr. Palmer has already made some experiments upon the addition of bran, and with a satisfactory result."

JUICE OF THE FRESH ROOT OF THE ELDER, AN EFFICACIOUS REMEDY IN DROPSIES.

Boerhaave, Gaubius, Sydenham, and, more recently, Martin-Solon, have recommended the juice of the inner bark of the common elder (*Sambucus nigra*) as of great efficacy in dropsies. M. RÉNÉ VANOYE strongly recommends, for the same purpose, the fresh juice of the root. The following are the conclusions which he has arrived at, as stated at p. 246 of Bouchardat's *Répertoire de Pharmacie* for Feb. 1849:—

1. The fresh juice of the root of the elder may be administered in all serous accumulations and infiltrations, which require the use of drastics. 2. It generally acts with greater energy and rapidity than the most active purgatives. 3. There is no advantage in combining it with drastics or diuretics: its action is never more apparent than when used alone, and to the exclusion of other treatment. 4. The first doses ought to be pretty strong: when they cause vomiting, the use of the medicine must not be abandoned, but it ought to be suspended for some days, if the vomiting be continued and severe. It is rarely necessary to give more than from 120 to 150 grammes, by the mouth, in spoonfuls. 5. Occasionally, this juice cures dropsies when other means fail. 6. The dangers connected with its employment are not serious. M. Vanoye adds: "I hope that these assertions, founded on actual observation, will induce physicians, especially those who practise in the country, to have recourse to a substance which can be used with such facility, and the efficacy of which is so great."

PEREIRA does not mention the root of the elder; but with reference to the *inner bark*, he says: "It has been used as a hydragogue cathartic in dropsy. It may be given in decoction (prepared by boiling one ounce of the bark in O ij of water to O j) in doses of f. ℥ iv. Smaller doses have been used as an aperient and resolvent, in various chronic disorders."—*Edit.* 1842, pp. 1442.

SURGERY.

LIGATURE OF LEFT SUBCLAVIAN ARTERY FOR SUBCLAVIAN ANEURISM: REMARKABLE DEVIATION OF THE VESSEL AND CHANGE OF ITS RELATIONS.

The patient was a lady, thirty years of age, who came under the care of Dr. J. M. Warren, of Massachusetts, in December 1847, for an aneurismal tumour, about the size of a pigeon's egg, situated just above the scapular end of the left clavicle. On searching for the subclavian artery at the point where it usually passes over the first rib, no vessel could be found in that situation. Different parts of the neck were then explored, which led to the discovery of a large artery passing obliquely upwards, parallel to, and about an inch removed from the external border of the trapezius muscle. Compression on this vessel caused a cessation of the pulsation in the tumour, and also of the pulse at the wrist. The first and part of the second rib were found passing obliquely across the neck above the clavicle. The insertion of the anterior scalenus muscle was at length distinguished; the tubercle on the first rib could not be discovered. In this case, the spine and ribs seem to have been carried upwards, while the sternum was moved in an opposite direction. The lady had formerly been affected with club-foot and double curvature of the spine, for which she had been successfully treated. In immediate contact with the artery, the brachial plexus of nerves was discovered. An operation was performed by making an incision, two inches long, from near the outer and upper edge of the sterno-mastoid muscle, in the direction of the scapulo-clavicular articulation, and about an inch from the edge of the trapezius muscle. A nervous band of some size was encountered, and at its side, directly over the artery, a large vein, apparently the external jugular. Dragging on the nerve caused a disagreeable and somewhat painful sensation in the arm. On passing, after opening the sheath of the vessel, the aneurism needle from below upwards, it at once encountered and raised the lower nerve of the brachial plexus, which was in most intimate contact with the artery. By depressing the handle, and urging the point forward, with careful manipulation, the eye of the needle was, without difficulty, brought out between these two organs. When traction was made downwards, before tightening the ligature, painful sensations in the arm were produced; but no pain was felt when the traction was made directly upwards. The ligature was then tied; and the pulsations in the aneurism, as well as those of the radial artery at the wrist, at once ceased; and all appearance of the tumour vanished. The ligature did not come away, though traction was used frequently, till ninety-six days after the operation, the patient having in the mean time done well. When last seen, before making the report, nearly nine months after the operation, she was quite well, and had recovered the use of her arm. The aneurismal tumour had in a great measure disappeared, but still conveyed the idea of containing a fluid. Directly on its surface was a very large arterial trunk, supposed to be the supra-scapular, pulsating powerfully, and at first giving an appearance of pulsation to the tumour, but capable of being separated from it. The pulse at the wrist had returned, but was a little less strong than on the opposite side.—(*American Journal of the Medical Sciences*, January 1849.)

MATERIA MEDICA AND PHARMACY.

CITRATE OF MAGNESIA.

This substance is a tribasic salt; or, in other words, it is composed of one equivalent of citric acid and three of magnesia. We believe that it is much used by some physicians in this country in extemporaneous prescriptions.

It has lately been made the subject of investigation by M. LARBAUD, from whose paper (*Répertoire de Pharm.*, Février 1849, pp. 232), on its chemical constitution and physiological effects, the following remarks are taken :—

M. Larbaud gives a table of 160 cases in which it had been used as a purgative. The patients were treated in the medical wards of the hospital of St. Anthony, under the direction of Dr. Vernois. The age and constitution, the diseases under which they laboured, the dose and mode in which the salt had been prepared, and the more marked physiological manifestations, were all carefully noted. From these observations, it appears that the citrate of magnesia, properly prepared, and given in doses sufficiently large, may be used as a substitute for the other saline purgatives, and that while it is equally prompt and energetic in its action, it is better tolerated by the stomach. It possesses over them the advantage of an agreeable taste, which, though slightly acidulous, has no influence on its action. Given in small doses, it acts as a mild laxative, occasioning no pain, and continuing its action for several days: in large doses, it never causes violent colic; and according to the statements of many patients, who have taken it, and were familiar with the effects of Seidlitz water and purgative lemonade, it is much less irritating than they are. Like other vegetable salts in solution, it is prone to decomposition, and cannot be kept ready-made, like Seidlitz water; but as it admits of being prepared so easily and so quickly, this need be no objection to prescribing it.

The three following formulæ are given by M. Larbaud, for the preparation of citrate of magnesia :—

1. Take of	Carbonate of Magnesia, pulverized in a mortar .	18
—	Citric acid	27.15
—	Filtered water, heated to 70° C. . .	500
—	Lemon syrup	60

Mix the magnesia with one portion of the water, and with the remainder dissolve the citric acid in a porcelain mortar: sweeten the solution of citric acid with the syrup, and pour it into a bottle: then add quickly the milk of magnesia. The bottle must be instantly corked, and the cork well secured by packthread or iron wire.

2. Mix the ingredients in the porcelain mortar, and when the combination is complete, filter and bottle the liquor: after cooling, add the syrup, and then cork the bottle. This formula is applicable to the preparation of the citrate from calcined magnesia.

3. Operate as above: add to each bottle, two grammes of bicarbonate of soda, and the same quantity of coarsely-powdered citric acid. Cork the bottle quickly and securely, and then turn it upside down.

The medicinal properties of the citrate do not seem to be influenced by its method of preparation: the gaseous product is rather the most active.

COLLODION, IDENTICAL WITH THE "LIQUOR CONSTRINGENS SCHOENBEINII."—QUESTION OF PRIORITY.

In Number II, p. 206, we did not sufficiently point out that to Dr. C. F. SCHOENBEIN of Basle, belongs the merit of discovering this substance, and of applying it to surgical purposes. Dr. S. thus writes :—"In the middle of December 1845, I discovered an organic compound, soluble in common ether, which in its dissolved state has ever since been usefully employed as a surgical remedy, and introduced into our pharmacopœias by the distinguished surgeon of Basle, Dr. Jung, under the term "Liquor Constringens Schoenbeinii." I had no sooner found out the ethereal solution, than I recommended M. Jung to try its surgical effects, and from very numerous experiments made in our hospital and elsewhere by that gentleman, it appeared that the said liquor proved to be most efficacious in healing, 1, chilblains of all

classes; 2, wounds produced by fire; 3, soreness of the skin of different descriptions; 4, certain swellings of the feet, &c. To produce those healing effects of the liquor, which I propose to call ETHER GLUE, or ETHER BALM, the suffering part of the body is immediately to be covered with the solution, by the means of a common pencil, such as is used for painting. In cases of exuding wounds, the sore part must, previously to that operation be covered by sticking plaster. Some of my children suffering much from broken chilblains, I cured with the liquid in a few days.

Many other Swiss physicians and surgeons, and particularly Drs. Miescher and Demme, of Berne, fully corroborated by their experiments the surgical results obtained by Dr. Jung, so that the liquid has been very frequently used these last two years. Dr. Jung communicated his results to the Philosophical Society just two years ago, and did more fully so to the Swiss Association for the Advancement of Science, at a meeting which took place at Schaffhausen, eighteen months ago. The paper read by Dr. Jung was published in the *Transactions of the Society*. As there is hardly any doubt that what the Americans have lately called "collodion," and stamped into a new invention of their own, is in fact nothing but the Liquor Constringens, known and used in Switzerland for nearly three years, everybody must admit that the priority of the preparation and surgical employment belongs to Switzerland, and not to America. Some years ago I sent to a number of scientific friends, ex. gr., to Faraday, Herschel, Berzelius, and Poggendorff, little transparent vessels made out of the Liquor Constringens, and I have no doubt that if my friends should put their little bells into common ether, they would see them readily dissolved, yielding a fluid closely resembling the American collodion." [*Lancet*, March 17th, 1848.]

OBSTETRICS.

THE STERILITY WHICH IS REMEDIABLE BY MECHANICAL MEANS.

MR. G. T. GREAM, Surgeon-Accoucheur to the Queen Charlotte's Lying-in Hospital, has published two papers in the *Lancet* (p. 91 and p. 204 of vol. i, 1849), in which he draws attention to the management of the local and mechanical impediments to conception, viz., obstructions at the orifice of the vagina and os uteri. The following is the substance of his communications.

I. OBSTRUCTIONS AT THE ORIFICE OF THE VAGINA. A lady, four months after marriage, had an unbroken hymen, and impaired health, owing to the excitement caused by the frequent attempts at, but non-completion of, sexual intercourse. When Mr. Gream was called to see her, he found her in an hysterical fit, lying insensible on a sofa. On the following day, having ascertained the nature of the case, he introduced into the vagina a large-sized metallic rectum bougie, causing a good deal of pain, and some loss of blood; and on the two following days, a still larger one. A few days afterwards, the husband said that the treatment had been quite successful. This patient, after some weeks had elapsed, was stout and healthy; and in little more than forty weeks from the period of the introduction of the bougies, she gave birth to a child. In another case of the same nature, when the impediment was rather an obstacle *quoad hanc* than anything else, Mr. Gream suggested that the wife should sit over the steam of hot water, that she should apply an unctuous application externally to herself, and "offer the contrary of resistance." Immediately after these recommendations had been carried into effect, conception took place. The patient's health is restored, and she is progressing most favourably in her pregnancy. Mr. Gream has selected this case for publication, in order to show by what simple means, in such cases, the relief of bodily suffering and mental anxiety may very often

be obtained. He had proposed to dilate the vagina of this patient, had not the means recommended proved successful. Mr. Gream has known virginity to exist after marriage, for periods varying from weeks to months, and even years. In such cases, he has found an unbroken hymen, or so complete a state of contraction and rigidity of the vagina, as to prevent the possibility of its dilatation by the natural means. In the not uncommon cases of unbroken hymen, without any great rigidity, the simple introduction of moderate-sized bougies will, in almost all cases, be followed by conception. The following case is given, as affording an example of a very prolonged virginity after marriage, and of the great benefit in such cases, both morally and bodily, from medical treatment. A gentleman and his wife lived unhappily together for ten years after marriage, in consequence of the inaptitude of the latter having prevented the accomplishment of perfect intercourse. The lady thus unfolded her history:—She had married very young; she resisted through fear; and until within the last year had never experienced the slightest sexual feeling, but now she felt differently; was anxious to become a mother, and to do away with the estrangement existing between herself and husband. The orifice of the vagina was rigid, and required very firm pressure to introduce the finger, and its introduction seemed to cause excessive suffering. No natural means could have caused penetration. Mr. Gream introduced an elastic bougie a little larger than the finger, and for four days afterwards introduced bougies of gradually increased size; the last that was employed being two inches in diameter. Their introduction caused extreme suffering, and some loss of blood. He then desired that for some nights a large sponge tent should be introduced, and kept within the vagina, and removed in the morning; and five days afterwards was able to introduce the largest metallic bougie with comparative ease, and with no pain. He recommended the continuance of the use of the sponge tent during each night for a short period. This lady is not yet pregnant; but the husband is reconciled to her, and pregnancy is expected.

II. Obstructions at the Os Uteri. Impediment at the uterine orifice depends upon unnatural constriction of the cervix, which is found in such cases to have no depression in its centre; its surface is smooth throughout, and upon viewing it through the speculum, the only indication of the position of the os uteri, is a vascular state of that part of the cervix immediately surrounding it. This condition may be met with in those of full habit, as well as in the anæmic and imperfectly developed woman. In both there will usually be much suffering from dysmenorrhœa.

There is also a state giving rise both to sterility and dysmenorrhœa, depending upon a constriction of the internal extremity of the cervix uteri. This may be detected by the introduction of a small bougie, or of any instrument of that form; and it is not necessary to have recourse to inventions for the uterus. The free dilatation of the os uteri, in such cases, is followed in the majority of instances by impregnation.

Should there be tenderness in the uterus or neighbouring parts, it should be relieved previously to the attempt at dilatation; sometimes in women of full habit, the abstraction of blood from the loins is necessary, or from the cervix uteri, by leeches, in order to relieve the inflammation consequent upon excitement not followed by pregnancy. Generally, warm hip-baths, laxatives, and a separate bed, are sufficient remedies for this inflammation or irritation. At first it is difficult to introduce a bougie of even a small size into the os uteri under these circumstances, but once introduced, it can readily be followed by one somewhat larger, and perhaps a third, of still greater size. On the following day, or in some cases after a longer interval, a considerably larger bougie may be passed, and then a dilator may be introduced. Mr. Gream has employed for many years an instrument made upon the same principle as the female urethra-dilator, with two blades, but without the

wooden appendages attached to that instrument; so that when the blades are closed, a simple round steel staff is formed. The point of this is inserted into the os uteri, and the dilatation effected by turning the handle until considerable resistance is offered to the further separation of the blades, or until the patient complains of sickness. This is repeated daily (unless much pain follow), until the os uteri remains open about the size of a goose-quill. In order to facilitate the introduction of the dilator, the patient should lie on her left side, as in labour. In some instances, by applying the dilator through the speculum, increased facility is obtained.

Mr. Gream cites cases from his practice where sterility and dysmenorrhœa were cured by mechanical dilatation of the os and cervix uteri; and alleges that this method of treatment is as common as it is successful. He objects to incising the os uteri. He says: "I have become cognizant of the formation of cicatrices after such treatment, and of permanent alteration in the shape of the uterus, causing, in my judgment, an impediment to conception ever afterwards; and as I have also heard of the occurrence of alarming hæmorrhage at the time of making the incisions, requiring plugs to be introduced into the vagina, I have not been induced to notice this practice further than to observe that it has been proposed and even hazarded." Sponge tents Mr. Gream thinks less useful than his dilator above noticed, which he declares to be both "safe and certain."

While we commend Mr. Gream's dilator as a very useful instrument, we cannot go along with him in setting aside, as always improper and dangerous, the practice of relieving the stricture by incision. We think that cases occur, in which it is the preferable method of cure. At all events, the objections seem insufficient for the positive interdiction of the practice. A small incised wound, in such a situation, cannot be conceived capable by its contraction, "of altering the shape of the uterus", or causing in any way whatever "an impediment to conception." The cicatrices resulting from lacerations of the os and cervix, during labour, are often very considerable in size, and few women who have borne children are without them; yet, it must be very rare indeed for them to give rise to any "impediment", and we are not aware of one case, in which they have been convicted of seriously "altering the shape of the uterus." As to the alarming hæmorrhage resulting from incision, the objection is stronger, and suggests the propriety of *caution*. Very troublesome hæmorrhage occasionally follows the application of leeches to the os uteri; but we do not, on that account, declare that they should *never* be so employed. Sponge tents may often be used with good effect; and we think that the majority of obstetricians, while they may go along with Mr. Gream in thinking well of the dilator, would be sorry to refrain from treating some cases by incision, and others by sponge tents. When rapidity of cure is an object, the former may suggest itself; and in hysterical patients, when the least possible amount of manipulation and of pain are desirable, the sponge tent, smeared with extract of belladonna, is what we would prefer.

USE OF ICE TO PROMOTE UTERINE CONTRACTION.

Drs. Mackall, Skinner, etc., speak highly of the power of ice, to reproduce labour-pains when suspended. It is pounded and swallowed freely. Dr. Mackall says: "During two years I have had frequent opportunities of observing its effects, and in no instance have I been disappointed in its action. In cases where labour-pains had been suspended for twelve or twenty-four hours, they have been renewed promptly and efficiently. In cases of inevitable abortion, when the uterine contractions are feeble and inefficient, and hæmorrhage considerable, I regard it as invaluable."—*Transactions of American Medical Association*, vol. i, p. 234.

WHO INVENTED THE AIR-TRACTOR? DR. SIMPSON, OR DR. MITCHELL?

At p. 205, and more fully at p. 283, we described and commented on the "Suction-Tractor," or "Air-Tractor," introduced to professional notice by Dr. J. Y. Simpson of Edinburgh, as a substitute for the obstetric forceps. A notice of this new instrument was also given in our report of the Edinburgh Medico-Chirurgical Society, at p. 302. Since our last publication, Dr. James Mitchell has not only asserted his claim to this invention (or to speak more correctly, of this practical adaptation of Dr. N. Arnott's proposal), but he has unambiguously charged the celebrated Professor of Edinburgh with appropriating as his own, what Dr. Mitchell says he made known to him by a description and drawings in a class exercise. Dr. Simpson says, that he received no hint from the essay referred to. After this assurance, it is to be regretted, that Dr. M. in a letter to the Gazette, should say, Dr. Simpson "must have been perfectly well aware of its previous application by me." No cause is benefitted by a disregard of conventional courtesy of expression. The following correspondence (which we reprint from the *London Medical Gazette* of 23rd March) unfolds the state of the case between Dr. Simpson and Dr. Mitchell.

No. I. Dr. Mitchell to the *Medical Gazette*.

Nottingham, March 13, 1849.

Sir.—The accompanying correspondence, to which I shall feel greatly obliged by your giving insertion in your valuable Gazette, took place within the last few days, between Dr. Simpson and myself, on the subject of an air-tractor invented by me,—brought before his notice, and afterwards by him displayed before the Obstetric and Medico-Chirurgical Societies of Edinburgh as his own. I have, since the correspondence took place, seen a report of the Obstetric Society's first meeting, at which Professor Simpson's paper on the air-tractor was read. In this production he states that no one, before himself, as far as he was aware, had made a practical application of Dr. Arnott's suggestion. The medical public will now see that he must have been perfectly well aware of its previous application by me. I received, yesterday morning, a note from Dr. Simpson's assistant, Dr. J. M. Duncan. He says that neither Dr. Keith nor Dr. Ziegler saw the exercises, but that he himself read and decided upon them. It can scarcely be credited, that one who had the means of knowing to whom the papers belonged, should have been allowed to indulge his likes and dislikes towards certain of the competitors, by his decision upon their papers: supposing, however, such to have been the case, it is a violent improbability to suppose that Dr. Duncan, who assists Dr. Simpson in everything, and is constantly with him, should have kept the article on the *air-tractor* from his knowledge, especially when he knew that the professor had "thought and talked of it" so long ago. I have the honour to be, dear sir, yours very truly,

James Mitchell.

No. II. Dr. Mitchell's First Letter to Professor Simpson.

Nottingham, March 3, 1849.

Dear Sir,—I was rather surprised, this afternoon, on seeing an account of an air-tractor, said to be invented by you, and which Mr. Higginbottom pointed out to me in the *Lancet* of to-day, to find that you had not acknowledged me as the discoverer of the application of the principle in such instrument. In your lectures of session 1847-8, you stated to your class, which I then attended, that Dr. Neil Arnott had, some years ago, attempted to apply traction to the fœtal head, when low down in the pelvis, by means of a leather sucker, similar to that used by boys as a plaything for lifting stones,—that you had yourself attempted in vain, at the Edinburgh Maternity Hospital, to apply such a leather sucker to a child's head,—that you could never get it to adhere,—and that if any gentleman in the class had mechanical genius enough to contrive a mode of applying the principle, you should be very glad to hear of it. I accordingly applied the principle, and

showed drawings of its applications to several students now at the university. I took advantage of your examination, towards the close of the session, to make my discovery known to you, which I did in answer to question No. 3, respecting the second position, where, in speaking of the rotation of the head from the third into the second position, or from an occipito-posterior to an occipito-anterior position, I mentioned my discovery in parenthesis. As I got my answers back again at the close of the session, and since I have them now before me, I may as well extract from them the part that I refer to. After speaking of the caput succedaneum, formed when the head is delayed after its rotation into the second position, I said: ("It is when there is difficulty at this part of the labour that Dr. Neil Arnott has suggested the possibility of a slight degree of traction being obtained from a leather sucker; such an apparatus seems to be inapplicable, but, acting on the suggestion, I would propose an instrument not more bulky than Dr. Lowder's vectis, and of which, on another sheet, I will make a rough sketch. It is on the principle of the air-pump, and consists of a tube and cup, by applying which to the child's head, a more or less partial vacuum can be obtained, quite sufficient to afford considerable extractive power without injury to the child, and the instrument might be modified in a thousand ways.")

On another sheet I did accordingly make a rough sketch of the instrument, with an explanation of its action. In the explanation attached to the sketch, I stated that the rim of the flattened cup might be made of "india-rubber or leather, and greased" (if the latter substance) "with lard, previously to its adaptation to the fœtal head." I have now before me the very drawings I sent in to you, and which you saw along with my written answers to the questions. I must confess that I felt considerably chagrined on finding that you never once mentioned the subject again, either to the class or to myself; and that, although before the whole class you said you should be most happy to hear of the application of the principle in question, when I showed you the application of it, I was treated with silent contempt. Still more chagrined was I to find to-day, that after I had been discouraged from bringing the instrument before the public by the apparent contempt with which you treated my invention, you yourself should be the first to bring it into notice, without giving the remotest hint (at least as far as the report in the *Lancet* gives) that its real discoverer was one of your own pupils. Trusting that you will do me the justice to mention my name in connexion with the instrument, and that you will inform me of your intention on this subject by an early post, I remain, sir, your obedient servant,

JAMES MITCHELL.

No. III. PROFESSOR SIMPSON'S reply to DR. MITCHELL.

Edinburgh, March 6, 1849.

DEAR SIR.—I have received your letter of the 3rd of March, and I can assure you that in the construction of the air-tractor I received no hint or suggestion from the competition class exercises, which you wrote at the end of the session 1847-8. I had thought and talked often of making an air-tractor, such as I have latterly constructed, long before you were my pupil. And I never, as far as I know, looked at the prize exercises which you wrote, because, as I have more than once publicly stated on this point, I do not profess to have time at my disposal to take all the necessary great care and trouble, which are requisite to decide among a number of different competitors for class honours; and besides, I have always confided the reading and determination of the prizes and exercises to others, upon whose judgment I could implicitly rely; believing I thus best avoided all chances and possibility of bias and pre-judgment. I have the honour to be, very faithfully yours,

J. Y. SIMPSON.

P.S. If you send your letter for publication (to which, of course, I can have no possible objection), I hope you will do me the favour of adding this

note to it. And I am sure your own feelings of candour will lead you to do me this justice.

No. v. Dr. Mitchell's Second Letter to Professor Simpson.

Nottingham, March 8, 1849.

Dear Sir,—I this morning received your letter of the 6th inst., in answer to which I have only to state, that the remarks you made on the last day of the session, led me to suppose that you had read the answers to the questions, or, at any rate, had had them read to you. I was still further confirmed in opinion by the statement of Mr. Ziegler, jun., who told me, casually, one day, in the dissecting-room, that you read some of the questions yourself, had others read to you, and afterwards submitted the whole of them to the inspection either of Dr. Ziegler or Dr. Keith, your friends. This was, of course, a mistake on the part of Mr. Z., or must have had reference to some previous year; since I have your word for the fact of your never having, "as far as you know", *looked* at the exercises which I wrote, because, as you have more than once publicly stated, you "do not profess to have the time necessary for deciding amongst a number of different competitors." I may here observe, that although I attended your lectures very regularly during two six-month sessions, I never heard you make such a statement: I do not, however, for a moment doubt the fact of your having said so in my absence. I may also observe, that there is a great difference between the amount of "great care and trouble" requisite for decision upon, and that required for the simple perusal of, exercises—or, perhaps, having them read to one whilst sitting at breakfast. Bias and pre-judgment there could be none, unless you made yourself acquainted with the names belonging to the several mottoes of the competitors. If you had "often thought and talked of making an air-tractor, such as you have latterly constructed, long before I was your pupil", I am willing to conclude, in justice to you, that you had quite forgotten all about it, when, in your lectures of last session, after mentioning Dr. Neil Arnott's leather sucker, you confessed that you did not know how the principle could be applied. Since you will, doubtless, mention the air-tractor in your class-room, when you arrive at that part of your course in which Dr. Neil Arnott's leather sucker was last session mentioned, and in which the air-tractor you invented and talked about so long ago, was not even hinted at, I feel myself called upon, in self-justification to those members of your present class who may have known me when in Edinburgh, to publish the whole of this correspondence. I have the pleasure to subscribe myself, yours, very faithfully,

James Mitchell.

PSYCHOLOGY.

DR. GUGGENBÜHL—TREATMENT OF CRETINISM.

The *Annales Medico-Psychologiques* for November 1848, contains a *résumé*, by Dr. Gosse, of a report published, in 1846, by Dr. Guggenbühl, the founder of the Asylum for Cretin Children, on the Abendberg, in the canton of Berne.[1] In his report, Dr. Guggenbühl keeps in view the close relation which exists between the mental and corporeal powers, and points out the disastrous influence which is produced on the mind by morbid alterations in the body. He proves that physical education should be accompanied by intellectual, moral, and religious training. In his preface, he points out that it is a duty of Christian charity, and a noble enterprise, to ameliorate the condition of those unfortunate beings, the Cretins, and to render them, as far as possible, useful members of society. In proof of the importance of the subject, he says, that along the banks of the Danube, in Austria, according to Dr. Schausberger, &c., of Steyer, "there are vast and populous parishes, where,

[1] Briefe über den Abendberg und die Heilanstalt für Cretinismus.

in the annual recruiting, there cannot be found a single man capable of bearing arms. At Cros-Pechlarn, and in the villages about Pechlarn and Brunn, not a single family can be found, without at least one of these unfortunate beings; but, on the contrary, many families are entirely composed of Cretins or demi-cretins." The subject of Cretinism has been, since the year 1840, treated of by several authors:—viz., Dr. Demme of Bern, Dr. Buek of Hamburg, Dr. Otho Thieme of Weimar, Dr. Roesch of Stuttgart, Dr. A. W. F. Herckenrath of Amsterdam, Dr. B. Beaupré of Friburg, Dr. Twining of London, Drs. Maffei and Roesch of Erlangen, M. Michaëlis of Aarau, Dr. E. Wells of London, Dr. Chavannes of Lausanne, Dr. M. Viszanik of Vienna; and in several Reports.

Dr. Guggenbühl believes that the mind, though existing independently of the body, is dependent, for its due manifestation, on the healthy condition of its material envelope; that on a healthy condition of the brain and spinal chord depends the healthy state of the body; and he traces the origin of the morbid symptoms, which exist in Cretins, to defective or improper nutrition in early childhood. The patients then deteriorate from year to year, until the human dignity becomes entirely degraded. Cretins have a mind as capable of perfection as that of other men; but their defective material organization retards its development. The object in the treatment of Cretinism is to establish an equilibrium, by remedying the morbid alterations in the body, and by applying a judicious course of moral and intellectual education to the development of the mind.

Among the *causes* of Cretinism, local or endemic circumstances are the most powerful. This has been shewn by Dr. Fodéré, in the valley of Aosta, where the atmosphere is maintained in a state of humidity, by the exhalations from the marshes, and from the river which flows slowly through it; the lofty mountains, by which it is surrounded, serving at once to reflect the heat of the sun, and, with the curvatures of the valley, to retard the free current of air. Dr. Fodéré has further found, that the most humid situations contained the greatest number of Cretins. Now it is just this state of endemic influences which favours the development of the scrofulous diathesis, with all its attendant evils. It has been proved, that the progress of Cretinism in the constitution can be arrested, by removing the individual to a locality where the air is drier, purer, fresher, and more favourable to healthy nutrition. Dr. Claivac of Martigny has also seen benefit arise from the use of baths, frictions along the spine, and exercise in pure air; in a word, from the use of those means which are proper in scrofula.

Following out these and other facts,—among which may be noticed the development of goitre and Cretinism in healthy persons and cattle coming to reside in malarious districts, and the improvement manifested on their removal,—Dr. Guggenbühl recognises scrofula as the determining cause of Cretinism. In his report, he points out the connection between them, as well as the influence of scrofula, as shewn in the birth of Cretin children. In conformity with incontestable experience, and with this theory, he has founded the institution on the Abendberg, for the medical and prophylactic treatment of Cretin children.

Diagnosis between *Idiocy* and *Cretinism*.—Idiocy has its seat in the brain, and may co-exist with a more or less healthy conformation of the body. Its subjects hear, but do not understand; they see, but do not perceive; they have no idea, and exercise no reflection. Idiocy may be congenital, from atrophy of the brain, but commonly it is the consequence of cerebral irritability or of Cretinism. It is not uncommon for this condition to succeed a state of intelligent but over-excited childhood, predisposing to a diseased of the brain.

In Cretinism, on the other hand, notwithstanding the diseased condition of the body, there is but a weakness of the brain. There is an obscure perception of objects, a weak association of ideas, a vagueness in the impressions produced on the brain by the organs of sense, a weakness in

judgment and comprehension, which do not exclude the idea of possible perfection, the defect being in quantity rather than in quality. Cretinism is often found in individuals of a wonderful memory, and astonishing faculty of comparison, who easily perceive the characters of external objects, but who may, from neglect, fall into mental alienation.

This obscurity in the perception of images, is the most characteristic mark of Cretinism, and arises from the insufficiency of external objects to stimulate the *torpid fibres of the brain*, so that their impressions are confused. The variable temper of Cretin children arises from the same cause, and it affords a key to their intellectual and moral treatment. This treatment consists in first making the individual acquainted with the resemblances and differences between objects, with their size, colour, form, &c., and then by connecting these ideas, so as to form a whole. When, at length, a sentiment of the existence of an eternal and infinite Deity, the rewarder of good and punisher of evil, becomes impressed on the mind of the child, then his *reason* is observed to develope and manifest itself. Cretins are often possessed, in a more or less marked degree, of memory, mechanical talents, of affections, desires, and passions. Dr. Guggenbühl recognises the idea, that an early intellectual education, if too hasty, is productive of disastrous consequences, when the intellectual and physical powers are both normally developed; but this principle, though applicable to most children, is not so to Cretins. The special character of Cretinism, is an increasing torpidity of the central parts of the nervous system, which necessitates immediate treatment at an age when these organs are capable of exercise. When an individual is attacked with Cretinism, it is possible for him to recover the perfect use of his intellectual powers, if he be, without delay, subjected to the treatment proper to his situation. This treatment should be intellectual as well as physical; but, before all, the development of the body must be favoured, and morbid symptoms must be remedied, for the mind cannot be perfectly developed in a diseased body.

The report of Dr. Guggenbühl also contains a succinct review of the principal forms, under which Cretinism is presented.

In the *atrophic* form the spinal chord is chiefly affected, as is shewn by paralysis and atrophy of the extremities. The *rachitic* form, as its name indicates, has for its special character softening and deformity of the bones, independently of nervous and muscular torpidity, engorgements of the lymphatic glands, &c. The *hydrocephalic* form is characterised by a tendency to congenital hydrocephalus, with weakness of the functions of the organs of the senses, languor of the moral and intellectual faculties, and seems to be a transition to congenital Cretinism. *Congenital* cretinism is shewn by a striking disproportion between the trunk and extremities, resulting from irregular and diseased nutrition, and presenting all imaginable degrees, from simple misproportion, to entire deformity of the organs. The same degrees of gradation are observed in the mental faculties, from simple torpor to the most complete state of idiotcy. The only efficacious method of preventing this, consists in the removal of the predisposing and exciting causes, or at least the withdrawal of as many victims as possible from their influence, especially among the poorer classes, who have not the means of readily changing their manner of living. This is a work worthy of the attention of all civilized governments; and the example has been set by Switzerland, in the Establishment for Cretins on the Abendberg.

Three principal forms of congenital Cretinism are distinguished by Dr. Guggenbühl. Of the first or milder form, the following case may serve as an example. A boy, nine years of age, was received into the establishment. His parents were healthy; but his maternal grandfather, and his great uncle, had been affected with Cretinism. His brothers had all been subject to convulsions in infancy; one of them had died of hydrocephalus, and another of *ramollissement* of the stomach. On entering, the patient was the subject of general debility; his knees were bent forwards; he tottered rather than walked; his muscular system was atrophied; his arms were long

and dry, and his body emaciated; the tongue was thick, and enlarged at the extremity; his teeth were irregular, mis-shapen, and encrusted; his lips tumid and pendant; he was affected with continual salivation, fetid odour of the breath, and difficulty in masticating solid food; the cornea of the right eye was obscured—the result of scrofulous ophthalmia. The head was pear-shaped, but symmetrical; the forehead retreating, and the back of the head flattened; the chin projecting, and the countenance pale and lymphatic. The child was of a fair size for his age. His intellect was on a par with the state of his body. His ideas on the most ordinary things were obscure and confused; his speech consisted of an indistinct and unconnected stammering, and of interrupted sounds; he succeeded better in making himself understood by signs. The senses were in a normal state of activity. He was envious, jealous, and passionate; but at the same time, he manifested a sense of having committed wrong, when he struck any of his companions. In his education, the progress of his body kept pace with that of his mind. His strength was so far increased, that he took pleasure in gymnastic exercises. His evil dispositions disappeared, he became gentle, sociable, and obedient; and evinced such a liking for study, that every letter or word which he mastered, caused him to utter cries of joy. His memory was stimulated by the sight of natural objects, or of their representations; he was slow in understanding, but never forgot what he had learnt. He gradually became able to read and write intelligibly, and to comprehend the grammatical value of some words. His religious education has been conducted on the same principles, and with good result. A second case appears to have been distinguished by a greater amount of hebetude, and a want of speech. Under education, the moral and intellectual faculties were developed in a favourable degree; especially the power of mental arithmetic, which is possessed in a remarkable manner by Cretin children. Speech was slow in being developed; but was at length obtained.

A second form is designated *mutism of Cretins*. Its subjects differ from the ordinary deaf and dumb, the hearing not being affected. Although among these, some have the hearing affected, the vocal organs changed, and the whole body scrofulous and torpid, yet, in most of them, the hearing is distinct, the eyes lively, the expression animated, and the conformation slender. They are capable of a sustained attention, and, to make themselves understood, employ an expressive pantomime. This form predominates in various parts of the canton of the Grisons, and in the valley of the Rhine, which forms part of the canton of St. Gall.

A third form of congenital Cretinism *(vice de croissance)* is prevalent in some countries, and may be illustrated by the following case. A girl, eleven years old, was only three feet six inches in height; her face was pale, stupid and large, her abdomen tumid, her extremities short and thick. At first she had some intellectual faculties, which were, however, not developed, so that, when at school, she could not keep pace with her companions. At Dr. Guggenbühl's institution, notwithstanding the difficulty experienced in regaining what had been lost, she made remarkable progress in physical development, in reading, writing, arithmetic, etc.; thus proving that a child, in whom the moral and intellectual faculties have been allowed to deteriorate, may, under judicious treatment, be restored to society, and even become an useful member.

In a more recent letter of Dr. Guggenbühl, he says, that several of the pupils had visited him after two years, during which time they had experienced no return of the malady, and their faculties had attained a considerable degree of development.

From the publication of the report in 1846, to September 1847, twenty pupils had left the establishment, most of them masters of the elementary branches of education, and having their physical powers sufficiently developed, to enable them to follow some occupation. Most of the patients were

improved, and none had died. The moral and intellectual faculties showed evident marks of improvement. Much benefit seems to be derived from the use of external objects, in stimulating the sluggish intellects.

It thus appears that Dr. Guggenbühl is not contented with the good results already obtained, but seeks to form on the Abendberg a model establishment, which may leave nothing to be desired; and, from his uniting the most generous philanthrophy with all which science can teach, no doubt can be entertained of his meeting with still further success.

OPIUM AS A THERAPEUTIC AGENT IN INSANITY.

In *L'Union Médicale* for 15th March, 1849, Dr. Michéa remarks, that there has been a diversity of opinion, as to the propriety of administering opiates in cases of mental alienation. Some, as Lazare Rivière, Daquin, Cullen, Odier (of Geneva), Sutton, and Perry, have boasted of the salutary effects of opium; while others, as Valsalva, Morgagni, Lorry, etc., have proscribed this medicine as most dangerous. Esquirol says but little about it, but appears rather hostile than favourable to its use. From the undeniable utility of opium in *delirium tremens*, M. Michéa has been led to try its effects on several mental affections, as paralytic insanity, acute and chronic mania, monomania, hallucinations, and acute dementia. In insanity accompanied by paralysis, opium has always appeared injurious. Where the memory and imagination retain some vivacity, it causes a momentary increase of delirium, which is succeeded by a marked tendency to intellectual asthenia; where dementia is already advanced, it increases its intensity. In all cases of chronic and paralytic dementia, it produces the precursory symptoms of cerebral congestion, a very common intercurrent affection in such cases. The same remarks apply to acute mania, the symptoms of which are increased, and cerebral congestion is produced, by opium, especially in persons of a sanguine temperament.

Opium has appeared really useful in chronic mania, monomania, either simple or complicated with hallucinations, and acute dementia. M. Michéa illustrates its effects by some cases.

Case I. Madame B., aged 50 years, of nervous temperament, whose mother had been subject to periodic mania, had been from her youth of a restless disposition. In 1845, after some domestic annoyances, she fancied that her chamber-maid had poisoned her; and this was succeeded by a state of most intense mania. She was treated by bleeding, baths, and cold affusions on the head, with the effect of diminishing the delirium. She remained, however, for two years in a state of chronic mania, with incoherence of ideas, but no apparent disorder in actions. Opium was administered, and caused at first a development of symptoms of violence and restlessness; but these disappeared in about eight days. In a very short time, the patient gradually lost the incoherence of ideas, to which she had been subject for two years, and became capable of being restored to society.

Case II. Madame S., aged 28 years, of moderately healthy constitution and nervous temperament. Her maternal grandfather had been insane. She was married, and had always performed the duties of a wife and mother, but learnt that she was the object of calumny to her neighbours. The annoyance occasioned by this, passed into a state of *lypemania*. She imagined herself unsafe in her own residence, and fancied that a plot was being formed against her life. She said she saw individuals of a malignant aspect, whose gestures presaged to her a violent end. On the 23rd of June, 1847, M. Michéa put her on a course of prolonged baths and purgatives, which produced no effect in the lypemania. On the 6th of July, these remedies were abandoned for opium. At the end of some days, delirium was found to be increased, and the lypemania was transformed into maniacal excitement. When being undressed to be put to bed, she offered resistance, uttered cries of distress, and threw in the faces of those who approached her, any object which was within her reach. The

use of opium was persisted in, and the delirium, gradually losing its energy, soon entirely disappeared.

Case III. F., aged 46, a grocer, was the son of a mother who died insane. In November 1847, he complained of being troubled with hallucinations of sight. He daily perceived adroit and active thieves every morning opening the ceiling of his bed-room, and taking possession of his apartment, in spite of his presence and of his attempts at opposition. As this patient, who had several times loaded a musket, with the intention of using it against these pretended robbers, might at any time endanger the lives of the persons who were about him, his family placed him in an asylum. On the 13th December, he was bled to twelve ounces, and put on a course of purgatives and tepid baths, with affusion of cold water on the head. No change was produced at the end of fifteen days. The patient no longer perceived thieves, but fancied he saw his wife prostituting herself to strangers; hence he addressed her with insults and threats of death. M. Michéa administered opium; by the constant use of which for eight days, the hallucinations of sight ceased, as well as the partial derangement of intellect.

Case IV. Eugenia R., formerly an actress, aged 38. Her father had been insane. From an early period of life, her conduct had been irregular. Her character gradually changed; from being gay and amiable, she became gloomy, irascible, and taciturn. Soon, she became indifferent to all that surrounded her, and her countenance appeared impressed with stupor and hebetude. She could not be prevailed on either to move or speak. On the 9th August, 1847, she was placed in an asylum, and M. Michéa immediately commenced the administration of opiates in gradually increasing doses. On the tenth day, there was general delirium; she uttered incoherent speeches, cries, and vociferations without cause. The use of opium was then suspended, and her disordered state was gradually calmed, and the momentary maniacal excitement disappeared, without any return of hebetude and stupor.

The influence of opium is exerted on the ganglionic and cerebro-spinal systems. With regard to the ganglionic nervous system, it depresses the secretory functions of the alimentary canal, producing dryness of the throat, and constipation; but it stimulates the functions of the heart, skin, and sexual organs. It produces acceleration, strength, and fulness of pulse: it causes an increase of the vital heat, and consequent turgescence or expansion of the blood, a principle of sanguineous congestions in internal organs: finally, it promotes perspiration, and excites erection and emission. On the cerebro-spinal system, it acts as a depressor of the sensory and motor functions, relieving pain, and putting an end to spasm; it is a stimulant of the cerebral lobes, and favours the manifestation of delirium.

M. Michéa observes, that insanity is often coincident with pain and spasm. The most striking symptom, the disorder of the intellectual and affective faculties, is not always primary or idiopathic. In most cases, it results from lesion of the ganglionic system, especially of the semilunar ganglia and solar plexus. Lobstein observed a relation between alterations in the appearance of the ganglionic nerves, and some encephalic and abdominal nervous affections. This is worthy of further inquiry, although such an alteration has been observed in various diseases, as in diabetes by Autenrieth; and also in persons of usually good health. Pain, principally ganglionic neuropathy, accompanies the mental affection; sometimes as a cause, sometimes consecutive, and aggravating the mental symptoms. Opium being an anæsthetic, its use will be readily understood: "*Sublatâ causâ, tollitur effectus.*" But it acts also in another manner; viz., by transforming the partial disease of intellect into a general disease, monomania into mania or polymania, or a chronic affection into an acute, which latter experience has shewn to be more amenable to treatment.

Two circumstances appear to M. Michéa to prove the truth of the positions

he has advanced. 1. Opium has been observed, while it almost always increases the delirium of ideas, to very frequently remove the delirium of sensation, *i.e.*, hallucinations and illusions of the senses. This has been adduced by him in support of the opinion which he maintains, in opposition to Esquirol and his followers, that hallucinations do not depend for their *point of origin* on the brain, but on an affection supervening in the course of the nerves of special sense. Their *definitive formation* can only be effected by the cerebral hemispheres. 2. It has often been remarked, that morphia, representing the sedative principle of opium, produces no increase in the delirium of ideas, or much less than crude opium; hence the preference of morphia to opium, in simple cases of hallucination or illusions of the senses.

Opium being a stimulant of the heart's action, one might be led to infer that the delirium, which follows its use, results from increased flow of blood to the head. But there is no absolute dependence, no necessary relation, between the manifestation of intellectual derangement, and the acceleration of the circulatory movements, for the intellect may remain sound, even where the pulse is 120 in the minute, and the face is tumefied, as in violent exercise, and some cases of fever. Besides, in many inflammations and fevers, especially in meningitis, delirium commences when there is little acceleration of the pulse, and often continues after the disappearance of this symptom.

To obtain advantageous results from opium in insanity, its use must be persevered in for at least eight or ten days, in gradually increasing doses. The preparations most commonly used by M. Michéa are laudanum, the gummy extract, and morphia. Of laudanum, he gives twenty drops the first day, and increases the dose by ten drops each day, till it reaches 120. The dose of the extract is five centigrammes (about three-quarters of a grain), gradually increased, by three centigrammes daily, to six or seven decigrammes (from nine to eleven grains). As to morphia, the dose has been at first a centigramme (rather less than one-sixth of a grain); and has rarely exceeded a decigramme and a half (about two-and-a-half grains).

The insane bear opium very well; with the exception of its occasionally inducing transitory vomiting. If no good result in ten or fifteen days, it should be discontinued: no benefit can be expected after this time, and there is risk of inducing cerebral congestion.

M. Michéa does not seem to have been aware that Dr. Seymour had, sixteen years previously, published his views on the use of *acetate of morphia* in various forms of insanity, in his work entitled "The Medical Treatment of Insanity." He says, "The preparation which I have preferred, and, with two or three exceptions, have always used, is the acetate of morphia; the mode of preparation, the solution; forty drops of the solution, which I have generally employed, contain one grain of the alkaloid salt. It has generally been, in mild cases, my practice to begin with a quarter of a grain every night, in solution, then, after a week, to increase the dose to half a grain; it has rarely, in such cases, been necessary to increase the dose beyond half a grain. In severe cases, I begin with half a grain (twenty drops), and increase it speedily to a grain (forty drops); rarely, most rarely, beyond this dose. The medicine is given at bed-time, and only at bed-time, the period which is intended for sleep; but it must be repeated, without the *intermission* of a single night, for several weeks, in mild cases; for at least three months, in the most severe ones. In some of these cases, at first, sleep is not obtained; in very few, rest is not produced. Slight nausea, and disturbance of the head, are felt the first few mornings; but in these cases, almost always at first, and always after a short time, both sleep is procured, and the waking hours are free from pain." (*Thoughts on the Nature and Treatment of several severe Diseases of the Human Body*, pp, 159-160.) Dr. Seymour has seen no case, whether morphia succeeded or not, in which it produced any untoward symptoms.

REPORTS OF SOCIETIES AND ACADEMIES.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

Sixth Meeting of Session 1848-49. February 13, 1849.
J. M. Arnott, Esq., F.R.S., President, in the Chair.

Exfoliation of the Anterior Arch of the Atlas. By Robert Wade, Esq., Surgeon to the Westminster General Dispensary. The subject of this affection (aged thirty-five) first came under the author's notice, at the Westminster Dispensary, in October 1845. He then had a large sloughy ulcer occupying the back of the pharynx, at the centre of which, dead bone could be felt with a probe. He had previously suffered from extensive exfoliation of the upper jaw, and had lost one of the spongy bones. Twelve years had elapsed since he had primary venereal disease, for which he was salivated, and was again subjected to the influence of mercury, by fumigations, for ulcerated throat. A course of iodide of potassium in sarsaparilla re-established his health for a time, but his throat again became sore two years afterwards. The same treatment was resorted to repeatedly, with varying success. Latterly he had suffered from pain in the neck, and from attacks of muscular rigidity in the same part. In one of these spasmodic attacks, he had been alarmed by feeling something give way in the back of his neck, "with a loud crack, like the report of a pistol." On looking into the mouth, some coagulated blood was seen adhering to the ulcer. After this, the spasmodic attacks became less frequent and severe; and, at the expiration of five months, a small portion of bone was seen projecting into the pharynx. With very little difficulty, Mr. Wade removed the greater part of the anterior arch of the atlas, with the entire articulating surface for the odontoid process of the axis. Caution was enjoined for a time, and the patient was enabled to resume his usual occupation in three months. The throat, however, has continued, from time to time, to be subject to attacks of ulceration. The power of rotating the head is now nearly perfect; but he has a catching pain at the back of the neck when he attempts to bend his head forwards.

Mr. P. Hewett said, that having seen upon the list the title of Mr. Wade's remarks, he thought it would be interesting if he brought forward the two specimens he had had for some years past. The one was a case of extensive exfoliation of the anterior arch of the atlas, in which the same symptoms were apparent as in Mr. Wade's case. They both took place after attacks of the venereal disease, in which the patients had been subjected to a mercurial course. During the time of the exfoliation, in the latter case, the patient suffered excruciating pain, and, whenever there was an attempt to examine the throat, the man always held his head between his hands, and, indeed, had great difficulty in moving it at any time. The head was kept in a recumbent position for some time after the removal of the bone, and the patient ultimately left the hospital quite well. Nearly two-thirds of the articulating surface which receives the odontoid process was exfoliated, leaving about one-third for the support of the head. Both exfoliations took place in 1810, and were recorded in the *Medical Gazette* for 1835. They both left the hospital well.

Mr. Wade said, that in his patient, the power of moving the head in the direction of the chest was very limited; perhaps only to the extent of half an inch.

Pathological Researches into the Diseases of the Ear. By Joseph Toynbee, Esq., F.R.S. This paper contains the results of 915 dissections, which are classified as follows:

Ears of persons known to be deaf	184
— persons supposed to be deaf	70
Ears in the stage of incipient deafness	358
— a healthy state	303
	915

The author enters upon an examination of the state of each of the structures composing the organ of hearing. The most frequent pathological condition of the *membrana tympani* consists in a thickening of its internal and middle layers, the deposit in its substance of calcareous matter, its adhesion, with or without the presence of membranous bands, to the inner wall of the tympanic cavity, and the destruction of more or less of its substance by ulceration. In the *tympanic cavity* the diseases most frequently present are a thickened state of the mucous membrane,—membranous bands which connect together the ossicular deposits of mucous, purulent, scrofulous, and calcareous matter. Anchylosis of the stapes to the fenestra ovalis occurred in twenty-six instances. One of the interesting results of these dissections is the rarity of disease in the Eustachian tube; in the 612 dissections of diseased ears, only twenty-one disclosed traces of disease in that portion of the organ of hearing. The author pointed out the agreement that exists between the diseased conditions described, and the history and symptoms of deaf patients during life; and expressed his conviction, that when rational plans of treatment, founded upon pathological research, are carried out by intelligent medical men, this branch of surgery will be rescued from the odium which at present justly attaches to it. [We hope, when this paper is printed entire, to present our readers with an analysis of it.]

Scarlatina. Dr. Webster was anxious to hear the opinion of members as to the treatment they had pursued in Scarlatina, now so prevalent. With regard to himself, he had not had so much experience as formerly, from the circumstance of his not being attending physician of any institution. Certainly, what little he had seen, convinced him that the present epidemic required very different treatment from that which was formerly pursued. Formerly, the treatment had been antiphlogistic. From what he had heard, they now required to support the system, and, so far from bleeding the patient, for every one now bled, there were from twenty to thirty formerly. The treatment, he understood, was to give tonics, bark, port-wine, and even brandy. The disease had been very prevalent, and very fatal. So far as his knowledge went, the only parallel period, in which the epidemic was so fatal, was more than a hundred years ago. In 1747, he believed that one of every two affected with it died. He thought it was the most serious disease they had had lately to deal with. The mortality in the fever hospitals was sometimes only one in forty. Now, according to the paper of Dr. Miller, read at the last sitting, the present mortality from Scarlatina was one in seven.

Dr. Gregory was not present when Dr. Miller's paper was read. He regretted his absence exceedingly, because he wished to have heard whether Dr. Miller made allusion to a phenomenon, of which he had seen only two instances, and on which he was anxious to gain some further information. He meant Scarlatinal Convulsions. He had not seen that matter treated of at length, though he had observed in the journals occasional allusions to cases. He was anxious to know whether it, like scarlatinal dropsy, was an occurrence often met with, and whether any gentleman had formed an opinion as to the nature of the convulsions. A case occurred at Chelsea, in the son of a Mr. Goodman. The convulsion came on very suddenly, and no infantile convulsions, or those incident to more advanced life, ever equalled them. They lasted from an hour to an hour and a quarter. He felt at once, that there was only one thing could be done, which was to bleed largely. The boy was twelve years old, and he bled him most profusely, taking from

eighteen to twenty ounces from him; with that, the convulsions ceased; he gradually recovered, and is now perfectly well. The whole family of nine had the disease, and the second who took the scarlatinal convulsions he treated in the same way, with but very small prospect of success, as they assumed a very different appearance. That was the oldest girl of the family, who bore the bleeding badly, and died. He opened the body, and found sufficient to account for death. These were the only two cases which he had seen. He had had a series of similar cases sent to him by Mr. Ward. He was anxious to know whether it had been prevalent during the late epidemic, and what mode of treatment had been found most beneficial.

Dr. Baly inquired if, in both children, there had been dropsy? If so, he should consider that the convulsions were secondary effects, depending on the dropsy, and arising from urea in the blood. If the convulsions occurred during the eruption, they might have arisen from the poison of the disease. Dr. Gregory said, in both of the cases the disease had advanced, the one to the thirty-seventh and the other to the forty-fifth day, and in both there was a disposition to dropsy. They were under his own care, in connexion with Dr. J. Johnson. He believed that the convulsions, like the dropsy, formed part and parcel of the disease. He did not know the condition of the kidnies. He had heard of convulsions occurring as early as the seventh or eighth day, but he had never seen such.

Mr. Rogers had met with two cases lately of scarlatinal convulsions, both occurring after the twenty-first day, when dropsy was still existing. The children suffered from albuminuria. The course adopted was cupping over the loins, and dry cupping to the nape of the neck; they recovered. The treatment in the beginning was antiphlogistic. In the present epidemic, he found that much caution was required, the patients requiring to be supported in every case by tonics, for some time afterwards.

Seventh Meeting of Session 1848-49. February 27.

J. M. Arnott, Esq., President, in the Chair.

Reports and Statistical Tables of the Cases at the Cholera Hospital of St. Giles in the Fields, in 1832. By the late Richard Pinckard, M.D. Communicated, with Explanatory Remarks, by J. S. Streeter. Cases of Asiatic Cholera appeared in the parish of St. Giles in the Fields in the commencement of 1832. A Cholera Hospital was established for their reception, and placed under the superintendence of the late Dr. Pinckard and Mr. Walker.

Between the 15th of February and the 29th of May, a period of fifteen weeks, 131 patients were received into the Hospital, or treated at their own habitations. The first table gives the number of cases admitted, and the number of deaths, in each of these fifteen weeks. The average number of cases per week was about 9; the number of deaths about 4·5. The total number of cases was 131; and of deaths, 69. No cases were admitted between the 29th of May and the 26th of June, when the disease re-appeared. During the succeeding sixteen weeks (from the 26th of June to the 16th of October), as is shown in the second table, 394 cases were admitted, and 182 deaths occurred; the average of cases per week being 26, and of deaths, 12. The third table gives the duration of the cases, whether fatal or not fatal. The fourth table gives the number of deaths and recoveries amongst patients of different ages, and of either sex respectively. The proportion of recoveries was, in both sexes, the same, but varied much according to the age of the patients; being highest between the ages of 10 and 20,—lowest in the most advanced period of life. In the fifth table, the cases preceded by diarrhœa are distinguished from those not preceded by that symptom; and the proportion of recoveries is shewn to have been much greater amongst the cases of the former class. In the sixth table, 124 cases, observed during the spring months, are divided into those admitted "in the

stage of impending collapse," and those admitted "in the state of actual collapse"; and the proportion of deaths and recoveries in each of these classes of cases is shown; the numbers of the patients recovering, "with fever", and "without fever", as well as the numbers dying, "in collapse", "in re-action", and "in fever", being likewise specified. The seventh table gives the same facts with respect to 381 cases which occurred in the autumn; and the eighth table is a summary of the same facts, with respect to the whole number of 505 cases. It is shown, that of 237 admitted in the state of "impending" collapse, only 34 died (21 in collapse, 7 in re-action, and 6 in fever), while 203 recovered (175 without fever, 28 with fever); and that, of 268 admitted in the state of actual collapse, 219 died (195 in collapse, 15 in re-action, and 9 in fever), while only 49 recovered (27 without fever, and 22 with fever).

The President observed, that now was a good opportunity for gentlemen to make communications on this most interesting subject.

Dr. Peacock had recently had his attention attracted to the subject under discussion, in consequence of the children of the Holborn Union, removed from Tooting, having been sent into the Royal Free Hospital. In all, 155 children were received; and of these, eighty-four were more or less indisposed. Nine only, however, presented decided symptoms of Cholera; thirty others had severe diarrhœa, vomiting, and prostration; and the remainder had only diarrhœa. The attack was not preceded by any marked premonitory symptoms, and was ordinarily sudden. The children were observed to droop, and after one or more of the usual rice-water evacuations, and some vomiting or retching, they went rapidly into the stage of collapse. In one case, the symptoms were most marked in less than half an hour after the seizure of the child. In all the cases, however, there must have been an entire emptying of the contents of the alimentary canal, before the serious symptoms supervened; and this seemed generally to have taken place during the night, while the vomiting, and other urgent symptoms, did not occur till the morning. Of the cases characterized by severe vomiting and diarrhœa, two only subsequently passed into the algide stage. Though, from the youth of the patients, it was difficult to speak positively on this point, the urine was believed to have been entirely suppressed, in all the fatal cases, for some time before death. Cramps occurred in only two cases. The disease proved fatal in four cases, death occurring, in these, in five, six, eight, and sixteen and a half hours from the accession of the serious symptoms. On post-mortem examination, the appearances detected were those which ordinarily characterize Cholera. The severe cases among the children were so rapid in their progress, that it was of great importance to ascertain the period of first accession of the symptoms; and with this intention frequent examinations were made. The cases which were seen at their commencement in no instance passed into the stage of collapse. In the algide cases, the greatest reliance was placed upon the application of heat and moisture to the surface. The patients were wrapped in blankets wrung out of hot water, and on which turpentine was sprinkled; hot bottles were then placed in different parts, and the child was again wrapped in dry blankets. They were then allowed to drink freely of cold water, generally containing a small quantity of brandy. Stimulating and anodyne liniments and sinapisms were also employed. In one case galvanism was applied, with the most beneficial effect. A girl of eight years was apparently dying: she lay insensible to what was passing around her; her breathing was very imperfect, and the pulse imperceptible at the wrist; and a thermometer under the tongue indicated only a temperature of 88°. Slight shocks were passed, at short intervals, for about a quarter of an hour, from the side of the neck to the epigastrium, with the view of stimulating the diaphragm through the medium of the phrenic nerve. Immediately on the application she opened her eyes, and complained of the pain; she breathed more fully; the pulse again became perceptible; and the temperature rose to 92°. She gradually rallied, and was well in a few days. This child's

life was, to all appearance, saved by the galvanism; but in another case in which he had tried it, while some benefit resulted, the improvement was only temporary.

Dr. Peacock said, before his recent experience he had been inclined to the view that Cholera was *never contagious;* but he was now compelled to believe, that however it might *ordinarily spread*, it was capable of being, under favourable circumstances, propagated by contagion. The children from Tooting were sent into the hospital on the 5th of January; and on that evening, and on the 6th, 7th, and 8th, about fourteen women, and four male attendants, were sent to take charge of them; the number of persons who, during the first fortnight, were directly in communication with the children, being probably about twenty-five or thirty. On the 13th, a man who had been sleeping in the boys' ward was seized with symptoms of Cholera, and died of the disease in the Holborn Union; and from this time to the 21st, eleven other male or female attendants were attacked by the epidemic; and of these, one died with all the symptoms of algide Cholera. Of these cases, all were of a serious description; and of the other regular attendants on the children, one only escaped entirely all symptoms of the disease. During the same period that, as now stated, twelve out of eighteen or twenty of the regular attendants on the children were thus suffering in the part of the building appropriated to them, there were at least fifty or sixty other persons in wards not many yards removed from the others, but which had little or no communication with them, who had no symptoms whatever of the disease. The case Dr. Peacock regarded as strongly supporting the view of Cholera being capable, under certain circumstances, of being diffused by contagion, or, more properly speaking, by infection. But the case was yet stronger than this: from the first that the children were in the hospital, free intercourse existed between the Holborn Union house and the wards. Several nurses, after being a few days in the hospital, returned to the union; and men, who slept at night in the union, were all day in the boys' ward. On the 13th—on the same day that the man before referred to was seized—another man was taken in the union with Cholera, and died; and, from this time, Dr. Peacock understood that many deaths from Cholera had occurred in the establishment.

Dr. Webster. During the twenty weeks ending the 1st of February of this year, the number of deaths in London was only 23,415; while last year, it was 29,220, consequently there were fewer deaths this year by 5,805; in fact, the mortality was then 24½ per cent. more than now. But the difference is more remarkable as to diseases of the respiratory organs. In the last twenty weeks, the deaths from this cause were 3,689, and in the same period of last year, 8,269; consequently, although enhanced by Cholera, there is a diminished mortality of 4,368, or about half; so that it appears the public health has not materially suffered. Dr. Peacock has alluded to the question of contagion. My opinion, is, however, rather confirmed,—that is, that it is non-contagious. Then there is another point. Is it a new disease? I do not think it is. I believe it may be traced in the writings of ancient authors; and my view is confirmed by one, whose opinion ought to carry weight with it,—I mean Dr. Chambers, whose lectures have been recently published.

Dr. Baly alluded to the relation subsisting between the diarrhœa which precedes the collapsed stage of Cholera, and the Cholera itself. Is this "precursory" diarrhœa really a part of the disease—in fact, its premonitory stage? or is it a distinct affection, which merely predisposes the patient to be attacked by that formidable malady? The former view of the question is the one almost universally adopted. It seems to be further generally admitted, that the full development of the Cholera attack may be easily prevented by administering the ordinary remedies for diarrhœa—opiates and astringents, especially opium with lead—in this premonitory stage. His (Dr. Baly's) own experience of the disease, as it had shown itself in Millbank Prison, did not satisfy him of the

correctness of these views in all respects. He had observed three classes of cases, which differed from each other, in respect of the state of the bowels previous to the full development of the Cholera attack. First, there are those most severe, and generally fatal, cases of the disease, where, in the course of two, three, or more hours, the canal empties itself by two or three free fæculent evacuations, and then the stage of complete collapse suddenly supervenes. In a second class of cases, the development of the disease is more gradual. For one, two, or three days before collapse is established, there is diarrhœa, the evacuations being at first fæculent, then gradually more and more serous in their character, and deficient in bile, till at length they are white or colourless; and this diarrhœa has generally been attended with increasing scantiness of urine, occasional vomiting, and sometimes very slight cramps. Now, in both these classes of casses, the diarrhœa clearly belongs to the Cholera, as much as do the symptoms that mark the stage of collapse. But no fact that had come under his observation led him to believe, that the remedies which check ordinary diarrhœa, arising from irritation or slight inflammation of the mucous membrane of the intestines, exert any well-marked influence over this true premonitory diarrhœa of Cholera. In a third class of cases, looseness of the bowels, more or less severe, presenting nothing unusual in its characters, and from time to time checked by remedies, has existed for some days, perhaps weeks, and then a change in the symptoms has taken place; the evacuations have become serous; sometimes vomiting has occurred; the skin has become lax, the countenance depressed, and in a few hours, or in a day or two, the Cholera collapse has followed. Now, in these cases, it has seemed to him, (Dr. Baly,) that the first diarrhœa, which existed so long, and showed itself amenable to ordinary remedial agents, was to be regarded, not as part of the Cholera, but as a distinct affection, which had rendered the patient susceptible, or more susceptible, of the Cholera poison. If ordinary diarrhœa has this predisposing influence, (and that it has he did not doubt,) the importance of checking the complaint as early as possible could not be denied. In this way Cholera may be, and (Dr. Baly believed) has been prevented. But still the cases of this kind are not, according to his observation, sufficiently numerous to explain the fact, that the prevalence of Cholera in a particular locality has sometimes undergone a great and almost immediate diminution, on measures being taken to discover every case of diarrhœa amongst the population, and to administer to the persons thus affected, opiate, aromatic, and astringent remedies. It is not yet proved, that more than mere coincidence, has subsisted in these instances, between the adoption of preventive measures and the sudden decline of the epidemic. The history of the disease teaches us, that its prevalence in a particular locality is often, not only of very short duration, but is also frequently as sudden in its cessation as in its rise.

With reference to treatment, he could not boast of greater success than others who had had to deal with this formidable malady. *The system is poisoned;* and till we discover a specific which shall neutralize the morbid poison, we must treat the effects it produces in the body, just as in typhus fever we treat merely the effects of the typhus poison. But in Cholera, we are at a greater disadvantage than in typhus, inasmuch as the effects of the typhus poison are in great part local inflammations, which may be moderated by remedies with which we are familiar. The system in typhus, though depressed, answers more or less readily to the influence of stimulants, and nourishment can be introduced into the bloodvessels; while in Cholera the local effects are such as we know not how to control, the strongest stimulants have comparatively little influence in rousing, and the natural process by which nutriment is conveyed into the blood is interrupted. He (Dr. Baly) had tried the various known remedies and plans of treatment that had been recommended, but with results so little satisfactory, that he was almost disposed to say (though it must be understood with some limitation), "the less that is done for the patient, the better his chance of recovery." Some of the

more energetic methods of treatment tended to hasten the fatal termination. Much good, however, was to be done by milder measures. Warmth externally applied, since it is favourable or necessary to the organic chemical functions naturally going on in the body, is important, aiding the system to resist and throw off the poison. But the degree of heat should be moderate, for too much heats the body, but does not effectually rouse the vital powers. The free administration of cold water was indicated, not only by the thirst, but by the known state of the blood; for this fluid is drained of its watery part, and till water is supplied to it, cannot serve its all-important purposes in the body, and can, indeed, scarcely circulate. He gives water, then, with a hope that a part may enter the bloodvessels, and not with the object of exciting vomiting. As a mere palliative, chloroform had been most serviceable. Administered by inhalation, it immediately relieved all pain and spasm, and sometimes for a time checked the vomiting. The comfort it in some cases afforded, was most remarkable. A small portion of port wine was generally added to a part of the water given to drink, but whether it exerted any influence for good or evil, was doubtful. In some of the milder cases, a large blister had been applied over the abdomen, and this appeared in some instances to cause an early restoration of the urinary secretion. Dr. Baly had employed the injection of saline fluids into the veins in six cases, but in no case with the result of saving the patient. The first effect was, in some instances, as remarkable as the cases treated in Edinburgh, in 1832. The breathing, which had become spasmodic and interrupted, became regular and free; the pulse returned; the natural colour and warmth of the surface were restored, etc.; but in a short time the collapse returned, and although a fresh revival of the system was produced by the injection of a fresh quantity of saline fluid, the patient ultimately sank and died. The salts used were, in some cases, the chloride of sodium, with carbonate of soda; in others, the chloride of sodium, with phosphate of soda. This method of treatment, if improved, might eventually prove highly useful, but the results of experience were at present unfavourable. He had tried large doses of calomel, and in one case gave five doses of ten grains in each, and five doses of a scruple in each, but no perceptible effect on the course of the disease was produced. After death, the greater part of the calomel was found enveloped in mucus in the stomach; a small portion only had passed into the duodenum.

Dr. Copland, in 1831, had had free access to the reports on Cholera, sent by surgeons in India to the directors in London, from the year 1817 to 1828. Their perusal had convinced him that the disease was infectious. Whatever were the conclusions arrived at by the various authors of these reports, the facts were undoubtedly in favour of infection. Dr. Copland referred to the labours of Sir William Pym, and his recommendation to the Board of Health in 1832, of isolating the infected persons. Dr. Copland believed that this proceeding was the cause of the then comparative small mortality. When the disease did spread, it was from overcrowding, and the visiting of the sick by their neighbours. In the Irish and Scotch fishing villages, the disease had spread in a direct ratio to the communication between the sick and the healthy. He had, in 1832, recommended the application of hot wet blankets sprinkled over with turpentine. This plan he still approved in infants and young persons, but in the stage of collapse in old persons it was not of much service. From the few trials he had made of Stevens's plan of treatment by salines, he was convinced it merited a more extensive employment.

Mr. Busk had not seen much of the disease since October, when about forty persons affected with it were admitted on board the *Dreadnought*. Of these, twenty-one died. The disease had been remarkably fatal, seeing, that with the exception of six persons, all the patients had been strong, healthy men, living on wholesome food, and not subject to privations. The six alluded to had been in the hospital-ship for six months previously. He had seen much of the disease in 1832, in the same class of men. The present disease was of

a different type to that, for in the present epidemic, the greater number, indeed all but six, had died, not in the stage of collapse, but of some consecutive affection—not fever, but a kind of oppression and coma, which presented themselves after the patients appeared convalescent. These symptoms were almost invariably attended by suppression of urine. The coma was, doubtless, the result of urea in the blood. He had also observed that the collapse varied from that of the former visitation; the cramps were not so severe, and though the surface was very blue, it was not so cold. The heat of the body was also easily restored, by the application of warm blankets, etc., to a temperature of 90°, whilst a thermometer placed under the tongue did not rise beyond 78°. In the late cases, perspiration had been entirely absent, whilst in 1831-32 it had been enormous; there was also less shrinking and collapse of the features. The duration of the disease was longer in this than the last.

From his own experience he should say, that in neither epidemic had medicine had any control. The only exception to this was that chloroform, whether applied externally or given internally, had a most beneficial effect in relieving the spasms and cramps. It had seemed to him that the principal force of the disease had fallen on the kidney, and that the restoration of the secretion of this organ would prevent a fatal result; but then, no remedies applied for this purpose had been of any avail. It was observed, that after the urine had been suppressed, the first water passed afterwards was always albuminous, and accompanied by casts of the tubuli uriniferi, showing that the epithelium lining them had been thrown off. On this occasion he should say that the disease was one of the kidneys as much as of any organ. He had noticed a symptom in the late epidemic, which, when present, had invariably proved fatal; viz., a discharge of blood from the intestines. After death, in these cases, considerable patches of ecchymoses were discovered in the large and small intestines. In these cases the mucous membrane, after a time, became gangrenous. He showed some morbid specimens of the disease.

Mr. Streeter had been present in two instances, where the injection of saline fluids into the vein of the arm was practised in the St. Giles's Hospital, but in both cases without the slightest alleviation. He had seen the warm bath, the hot-air and spirit-vapour bath, by means of the basket apparatus, under the bed-clothes, employed without producing the slightest reaction. He had employed mustard extensively over the skin of the abdomen, chest, and limbs, and although its specific action on the skin followed, it failed to arrest the progress of the collapse; nothing but vomiting, recurring at intervals, retarded or removed that. He had seen phosphorus employed, and in two instances had found the pills in the bodies after death. In one, a rapid case, they had not passed the stomach. In the second, a protracted case, one of the pills was found, curiously enough, in the appendix vermiformis. The premonitory diarrhœa he had not found to yield to simple and ordinary remedies. During the prevalence of Cholera, every bowel complaint should be regarded as premonitory, and receive the most active treatment. His usual remedies were, superacetate of lead, powder of opium, calomel, and capsicum, of each one grain in a pill, to be administered after each action of the bowels, with a dose of acetate of ammonia and nitric ether. In conclusion, he would observe that he felt assured of the infectious nature of Cholera, and believed that it was very frequently communicated by the medium of clothes, as well as by personal exposure.

Dr. Garrod, on being called upon by the President to give the Society the results of his researches into the condition of the blood in Cholera, stated that in general they accorded very much with those of Dr. O'Shaughnessy, made during the epidemic in 1832. Dr. Garrod had always found, that the blood in Cholera exhibited characters different from those which presented themselves in any other disease. [Dr. Garrod's extremely valuable and accurate researches on this important subject, we have been favoured with for publication, and they will appear as an original communication in our next Number.]

ANNIVERSARY MEETING, MARCH 1, 1849.
J. M. ARNOTT, ESQ., PRESIDENT, in the Chair.

ANNUAL REPORT OF THE PRESIDENT AND COUNCIL.—The President and Council have to congratulate the Society on its continued prosperity. The number of Fellows is now larger than at any previous period; and the income of the Society during the past year, as for several preceding years, has exceeded the expenditure.

The total number of Fellows on the 1st of March, 1848, was five hundred and eighty-eight. The number of those who, in the course of the past year, have, from death and other causes, ceased to be Fellows of the Society, is twenty-two; while thirty-two new Fellows have been elected. At the present time, therefore, the Society is constituted of five hundred and seventy-eight Fellows; thirty-one of whom are honorary, and five hundred and forty-seven ordinary, Fellows. Of the latter number, three hundred and one are resident, and two hundred and forty-six non-resident.

The following table shows the total number of Fellows (Ordinary and Honorary) constituting the Society, the number of those paying annual subscriptions, and the financial state of the Society in each of the six years from the 1st March, 1843, to the present time.

The Years.	1843-4.	1844-5	1845-6	1846-7.	1847-8.	1848-9.
Fellows in August, including Hon. Fellows.	501	512	522	534	559	578
Fellows who have paid the Ann. Subscription.	235	250	266	267	273	284
Ann. Subscrip. Admis. and Composition Fees.	£ s. d. 973 7 0	£ s. d. 995 8 0	£ s. d. 1020 12 0	£ s. d. 1048 19 0	£ s. d. 1099 7 0	£ s. d. 1102 10 0
Sales of Transactions, etc. and Interest.	109 18 10	117 17 11	132 10 5	160 7 8	123 16 8	103 10 9
Total Income.	1083 5 10	1113 5 11	1153 11 5	1209 6 8	1223 3 8	1206 0 9
Total Expend., exclusive of purchase of Stock.	954 14 1	848 1 10	976 8 4	944 6 11	877 0 2	1104 9 10
Amount of Stock purchased in each year.	100 0 0	300 0 0	200 0 0	250 0 0	350 0 0	300 0 0
Stock in the Funds at the close of each year.	1100 0 0	1400 0 0	1600 0 0	1850 0 0	2200 0 0	2700 0 0

From a statement given of the disposal of the Society's last year's income, it appears, that of the whole sum of £1,514. 2*s.* 4*d.*, nearly one half, namely, £639. 13*s.* 5*d.*, has been added to the property of the Society; £409. 12*s.* 6*d.* having been expended in the purchase of £500. Stock in the Three-per-Cents. Reduced, and £201. 10*s.* 10*d.* in additions to the Library; while the current expenses have amounted to £537. 14*s.* 9*d.*, the incidental expenses to £77. 7*s.* 2*d.*, and the expense of printing and publishing the 31st Volume of the "Transactions" to £200. 7*s.*

The mode of dealing with PAPERS has been under the consideration of the Council; and it has been decided, that, with the view of eliciting from Referees an explicit statement of the grounds on which Papers are recommended for publication, or the contrary, the letter accompanying each paper

referred shall for the future direct the attention of the Referee to the following points :—

1. The suitableness of the subject for admission into the "Medico-Chirurgical Transactions."
2. The novelty or interest of the facts or reasoning.
3. The length of the Paper, considered in relation to the importance of the subject of which it treats.
4. The propriety of printing the Paper "entire," or only "in part."

At the last General Meeting of the Society, the President announced that the Council had resolved to render the Library as perfect as possible in all its departments, and that a large Committee of Fellows of the Society had lent their aid to the Librarians for the furtherance of this object, but had not then completed their labours. This Committee, in the course of last year, furnished the Council with lists of the works in which the Library appeared to be deficient, and subsequently prepared a select list of the newer and more important works, the immediate purchase of which was thought desirable. The estimated cost of these selected works (432 in number) having been ascertained, their immediate addition to the Library was determined on, and the greater number of them have already been procured. The Council have it in view to purchase, likewise, the other works recommended by the Committee, which amount to upwards of 2000 : and have, with this object, taken measures to learn the prices, at which they may severally be obtained in this country and abroad.

A new Supplement to the Catalogue, including all the works added to the Library in the course of the last two years (828 in number), has been prepared by the Librarians, and printed, and is ready for distribution amongst the Fellows. The total number of independent works in the Library is now 13,926 ; the number of volumes being about 20,000.

The Society's lease of their present apartments extends to Michaelmas 1855, but is terminable at Michaelmas 1850 : and the Council have had under consideration, whether the Society should remove to more commodious premises elsewhere, or should, by a new arrangement with their landlord, obtain additional rooms in the present house. The Council have satisfied themselves that it would be exceedingly difficult to procure other suitable premises : and have ascertained that the landlord, from whom the existing lease is held, is willing to transfer to the Society his interest in the entire house, which extends to 1861, for a yearly rent of £210. They have, therefore, adopted the following resolution, which is now (in accordance with the bye-laws, chapter 18) submitted for the sanction of the Annual General Meeting of the Society :

"That it is expedient to enter into arrangements for the purpose of obtaining, at a rent of £210. per annum, the whole house in which the Society at present holds apartments." This resolution will be considered at a special meeting on the 1st of May.

President's Address. The President briefly addressed the Society respecting the following Fellows who had died during the past year. Dr. Nelson, one of the founders of the Society in 1805, had lately died at Tunbridge Wells. Mr. Page Scott had joined the Society in 1821 ; he was originally a partner with Dr. Rigby, of Norwich, and for some time surgeon to the Hospital and Castle in that city. He had for many years a most extensive midwifery practice, and was the author of a paper on Rupture of the Uterus. Dr. Wm. Campbell had been in the prison at Verdun until after the disaster of the French at Moscow. He afterwards graduated at Edinburgh, and became a teacher and practitioner of midwifery in that city ; he had formed a valuable museum. Mr. Crowfoot, of Beccles, was a pupil of Cline and of Cooper, and was an active and zealous member of the profession, to the literature of which he had contributed. He was mentioned with commendation by Sir A. Cooper, in his work on Dislocations. He died of malig-

nant typhus fever, consequent upon a dissection wound. Mr. Charles Lewis Parker entered the Society in 1843. He was educated at the Charter House, Wadham College, Oxford, and St. Bartholomew's Hospital. He was surgeon to the Radcliffe Infirmary, Oxford, and he died of a low fever at the early age of thirty-seven. Dr. Clendinning was a native of the county of Mayo, became a fellow of Trinity College, Dublin, and took a degree at Oxford. He was elected Physician to the Western Dispensary in 1828, and to the Marylebone Infirmary in 1834. He was elected F.R.S. in 1841; he had been Secretary, Vice-President, and Trustee to the Society.

Election of New Office Bearers. Dr. Webster, who had previously requested permission to address the Society, was informed by the President that he could do so. He said, he rose to address a few remarks to the Society, in consequence of some rumours prevalent amongst several Fellows, who thought themselves aggrieved, because their own names had never appeared in recent house-lists for election into the Council. He considered it better to state publicly that such feelings existed, than to leave dissatisfaction to continue; for if any grievance really prevailed, when it was mentioned, the cause would, doubtless, be removed—and if unfounded, no refutation was necessary. In coming forward, on the present occasion, he (Dr. Webster) was actuated only by a desire to support the character of the Society. Having been already on the Council, entertaining no desire at present to be again in office, he assured the meeting that the sole reason influencing him to make any remark was, that future Councils might know the opinions entertained by some Fellows in regard to the usual mode of electing the officers of the Society, as likewise of appointing the Committee of Referees. He would much regret if his remarks should hurt the feelings of any gentleman now recommended for election; many of them were his personal friends, and for whom he entertained great regard; but on the present occasion he spoke purely on public grounds, and without reference to private friendship. Looking, therefore, impartially at the house-list recommended for election as the future Council, amongst the twenty-one names it contained, fourteen, or two-thirds, were officers of hospitals, whilst two hospitals actually monopolized six of these gentlemen, viz.: the schools to which the secretaries were attached, there being three members from each. Nine of the new Council had been previously in office, five were junior Fellows, elected in 1840, or more recently, and nine had never contributed any paper to the *Transactions*. He (Dr. Webster) did not by any means object to hospital officers being members of the Council,—quite the reverse; but, candidly speaking, a more equal distribution should prevail, as well amongst hospital officers as the Fellows at large; and there should be no monopoly, since the London, the Charing Cross, the Free Hospital, and perhaps others, were passed over at present. Further, on looking at the list of Fellows, recently published, out of the 128 resident Fellows, elected in 1840 and previously, forty-five, or one-third, never were on any Council, although some had been twenty or twenty-five years in the Society. But there was another body, almost of equal importance with the Council, viz., the Committee of Referees, to which he (Dr. Webster) would also beg to allude; and although the members thereof, instead of being elected by the Society, were indirectly nominated by the Council, similar remarks might apply to its constitution. For example—of the twenty-four Fellows composing the Committee of Referees, eighteen were hospital officers; the half of these, or nine, being attached to two schools, one of which happened to be that of the medical secretary; four belonging to St. Bartholomew's Hospital, and five to King's College; eight were junior Fellows elected in 1840, or subsequently; seven never contributed one line to the *Transactions*, and seven had not served on previous committees, where they could alone see the mode in which the Society's business was conducted. According to his (Dr. Webster's) views, the Committee of Referees should be chiefly composed of senior Fellows, who had been previously members of

Council, and especially of authors who had contributed papers to the *Transactions;* because, having themselves gone through the trying ordeal of submitting their own productions to the decision of others, when in turn, acting as judges, they could then more easily understand the feelings and anxieties of parties placed in the same nervous position. He (Dr. Webster) likewise thought no member of the Council should at the same time be placed on the Committee of Referees, as this gave the person so situated double power: first, in giving an opinion on the merits of a paper; and, secondly, of voting as well as of speaking, in favour of or against its publication, when the referees' reports came before the Council for consideration. A monopoly of offices in any way should be always avoided. Having considered it his duty, as an independent Fellow, to make these remarks respecting the constitution of the house-list for the new Council, as also on the existing Committee of Referees, he (Dr. Webster) would only further observe, before sitting down, that however excellent a library the Society had accumulated, however eminent many of the Fellows were, undoubtedly some being of the highest repute in Europe, and whatever other advantages the Society possessed, its great reputation chiefly depended on, and would always continue, according to the value and importance of their published *Transactions*. For these reasons he (Dr. Webster) considered the fact of having contributed papers to the Society should give the writer a strong claim, not forgetting others, to fill any office in the Society. Indeed this opinion had been often promulgated by one of their late secretaries, whose premature death they now deplored—namely, Dr. Clendinning, and he fully concurred in that sentiment, since it would prove a good stimulus to work. After apologizing for the time occupied with his remarks, Dr. Webster hoped the observations, and the analyses he had taken the liberty of making, would be in due time considered by future Councils in the way such questions deserved, so that any unpleasant feelings which might now exist in the Society would be allayed, harmony be restored, and matters go on henceforward smoothly and satisfactorily. [Dr. Webster, after being frequently cheered during his address, sat down amidst general applause.]

Dr. Baly, who had once or twice risen to object to some statements of the last speaker, but was requested to wait until his conclusion, now said that he had no personal ends to serve, in the office he held. He was only a lecturer at, and not an officer of, St. Bartholomew's Hospital. Since his election, only one referee had been appointed, connected with that hospital.

The President said he had allowed the discussion to proceed so far, but would not permit its continuance. The Council had always endeavoured to do the best for the Society.

The following is the list of the new officers of the Society:—President: Thomas Addison, M.D. Vice-Presidents: Henry Davies, M.D.; George Burrows, M.D. F.R.S.; George Macilwain; Samuel Solly, F.R.S. Treasurers: James Alderson, M.D. F.R.S.; Benjamin Phillips, F.R.S. Secretaries: William Baly, M.D. F.R.S.; Fred. Le Gros Clark. Librarians: John Hennen, M.D.; James Dixon. Members of Council: Robert Nairne, M.D.; William Sharpey, M.D. F.R.S.; Leonard Stewart, M.D.; Seth Thompson, M.D.; Charles J. B. Williams, M.D. F.R.S.; Sir B. C. Brodie, Bart., F.R.S.; James Bird; William Fergusson, F.R.S.; Samuel A. Lane; James Paget.

The "house list", it will be seen, was adopted in its integrity, but this would perhaps not have been the case, had there been *another list* voted for by Dr. Webster and his supporters. The discussion is certain to do good; yet, we daresay, all are equally pleased that those nominated by the Council —individually so unexceptionable—should have been elected. It is expected that many subjects of vital importance to the Society (including the method of electing office bearers), will be fully discussed at the special meeting to be held on the 1st May.

MEDICO-CHIRURGICAL SOCIETY OF EDINBURGH.

SIXTH MEETING OF THE SESSION. FEBRUARY 21, 1849.

JAMES SYME, ESQ., PRESIDENT, in the Chair.

OBSERVATIONS ON THE ASIATIC CHOLERA AS IT APPEARED IN ST. PETERSBURGH IN 1848. By DR. MAURICE MARGULIES, Physician in ordinary to his Highness the Grand Duke Alexander, Prince of Hesse.—A translation of this memoir, (from the original French), will be found at p. 620 of the *Edinburgh Monthly Journal* for March 1849.

MALFORMATION OF THE WRISTS AND HANDS OF A CHILD. DR. ALEXANDER WOOD exhibited a child of fourteen days old, presenting an unusual malformation of both wrists and hands. The thumbs were wanting; the other bones of the hands (both metacarpal and digital) were longer than natural, and the flexor tendons of the wrists were contracted so as to cause great deformity.

The PRESIDENT and DR. SIMPSON suggested, that the deformity might possibly be lessened by tenotomy.

VARIOLA IN THE FŒTUS. DR. SIMPSON exhibited drawings of two cases of variola occurring in the fœtus, which had fallen under his observation in Edinburgh. In both cases the fœtus had been expelled *dead*, and both mothers had *modified* small-pox. Dr. Simpson entertained some doubts (theoretically) regarding the propriety of vaccinating a woman while pregnant, believing it possible that the mother might be *vaccinated*, and the fœtus *thereby* inoculated with variola.

SINGULAR SPASMODIC ACTION OF THE LOWER JAW. DR. SPITTAL communicated the case of a negro, aged 88 years. On the 2nd February 1848, he laboured under slight bronchitis, with other ailments usually accompanying approaching dissolution from old age. He died on the 10th. On visiting him, DR. SPITTAL was struck with a remarkably loud intermittent rasping noise, not unlike the croaking of a young raven. Not knowing whence the sound proceeded, he inquired if such were in the room, when he was informed that the noise was caused by the patient grinding his teeth. It was said, he could not avoid this when awake, unless he forcibly kept his teeth asunder. To avoid the fatigue of this voluntary effort, he was in the habit of interposing different substances, sometimes the bed-clothes, at other times, small, flat, wedge-shaped pieces of wood. The teeth were very much worn down. The habit had existed, more or less, for about sixteen years, and was said to have commenced with rheumatism in the head. The patient had passed a large round worm, after which the grinding had diminished. He had since been occasionally affected with abdominal uneasiness, but passed no more worms. Dr. Spittal stated, that this was an affection such as he had never before met with, or heard of.

DR. ALEX. WOOD, who had also known the patient, thought that his disease was simulated.

DR. SELLER remarked, that there could be no doubt that a convulsive action of the muscles of the jaw occasionally took place. He had seen a girl, in whom this followed acupuncture of the chin. A loud, uneasy grinding of the teeth was the consequence; to remedy which, she used to insert the steel busk of her stays, and with it, pull the jaw forcibly down.

APPOINTMENTS.

Baddeley, John Carr, M.D., of Chelmsford, appointed to deliver the Harveian Oration at the Royal College of Physicians, on the 25th of June next.

Desgranges, M., appointed Principal Surgeon to the Hôtel-Dieu at Lyons.

Dick, Paris Thomas, M.D., appointed Physician to the Bedford Infirmary, in the room of Dr. Witt, resigned.

Freckleton, G., M.D., appointed Consulting Physician to the Liverpool Infirmary.

Roux, M. Jules, appointed Professor of External Pathology and Operative Medicine to the School of Medicine at Toulon.

Smith, W., Esq., appointed Surgeon to the Manchester Royal Infirmary.

Thurnam, John, M.D., appointed Medical Superintendent of the Wilts Lunatic Asylum.

Turnbull, James, M.D., appointed Physician to the Liverpool Infirmary, in the room of Dr. Freckleton, resigned.

Ward, Nathaniel, Esq., elected Assistant Surgeon to the London Hospital, on the 7th March.

Williams, R. Lloyd, M.D., appointed Physician to the North Wales Hospital for the Insane.

OBITUARY.

Baird, Robert, Esq., Surgeon, at Kirkliston, near Edinburgh, on the 12th February. Mr. Baird and his sister were both unexpectedly cut off by cholera, during the short, but fatal visitation of that disease in the village of Kirkliston. Mr. Baird was much esteemed as a practitioner, and respected as a Christian, by all classes of the community.

Jackson, Thomas, Esq., Surgeon, in his 79th year, at Market Rasen, Lincolnshire, recently.

Kirkwood, William, Esq., Assistant-Surgeon H.E.I.C.S, Madras Establishment, at Dunbar, Scotland, on the 16th March.

Latham, John, Esq., Surgeon, in his 74th year, at his residence, Wavertree, on 8th March.

Lloyd, Thomas, M.D., at Aberystwith, recently.

Mouat, James, M.D., Surgeon of the 15th (King's) Hussars, aged 57, at sea, on board the steamer Bentinck, on the 21st December, 1848.

Murray, James, Esq., Surgeon, of cholera, at Cairnbrae, Lanarkshire, on the 15th January.

Parkin, Dr., R.N., of Cawsand, in the county of Cornwall, Inspector of Fleets and Hospitals, in his 71st year, at his residence, Woolwich, having served upwards of fifty-three years.

Pennington, R. R., Esq., at his residence in Portman-square, of chronic bronchitis, associated with low fever, on the 8th March. Mr. Pennington, though unknown as an author, was in great repute, and enjoyed lucrative practice. Educated under Pott for the higher departments of surgery, he selected the more laborious career of family practice, for which his intimate acquaintance with medicine, surgery, and midwifery, admirably qualified him. For some years past, he was unable to endure the fatigues of general practice, but was extensively consulted, both in medical and surgical cases. He was 85 years of age at his death; and had been sixty-two years in practice.

Robins, Jacob William, Esq., Surgeon, in his 72nd year, at Worthing, Sussex, on 16th Jan.

Roe, Edward, Esq., Surgeon, in his 49th year, at his residence, Canonbury Lodge, Canonbury-square, London, on the 23rd February.

Stewart, Leonard, M.D., aged 51, at his house, Keppel-street, Russell-square, on 26th Feb.

Tessier, M. le Docteur, Physician to the Great Hospital of St. John, at Turin, lately. Dr. Tessier was the author of a book on the use of sulphurous baths in certain skin diseases, and of an account of a case of dissecting aneurism.

Varicas, Robert Abraham, Esq., Surgeon, (late of Woburn-place, Russell-square), at 19, Tonbridge place, New-road, of consumption, on the 15th March.

White, Anthony, Esq., Consulting Surgeon to the Westminster Hospital, etc., at an advanced age, at his house, 5, Parliament-street, on the 9th March. Mr. White had twice the honour of being chosen to the Presidential chair of the College of Surgeons. In 1848, Mr. White published an interesting pamphlet, entitled, "An Inquiry into the Proximate Cause of Gout, and its Rational Treatment."

BOOKS RECEIVED.

Bouillaud, M., Mémoire sur les faits relatifs à sa Révocation. Paris: 1849. Cooper (White) on Near Sight, Far Sight, and Impaired Vision. London: 1847. Coote on the Homologies of the Human Skeleton. London: 1849. Crichton Institution at Dumfries, Ninth Annual Report of. Dumfries: 1848. Crichton Institution, Report of, during prevalence of Cholera at Dumfries. Dumfries: 1849. Dalrymple's Pathology of the Human Eye. Fasc. I. London: 1849. Hawkins, Hunterian Oration for 1849. London: 1849. London University Calendar for 1849. London: 1849. Maclise's Surgical Anatomy. Fasc. II. London: 1849. Miller (Professor James) on Medical Missions. Edinburgh: 1849. Proceedings of the Birmingham Pathological Society. Birmingham: 1848. Wilson (Erasmus) on the Healthy Skin. 3rd Edition. London: 1849.

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ORIGINAL COMMUNICATIONS.

ON THE PATHOLOGICAL CONDITION OF THE BLOOD IN CHOLERA.

By ALFRED BARING GARROD, M.D., Assistant Physician to University College Hospital.

THE author of the following paper feels some hesitation in publishing the analyses, which he has had the opportunity of making, as to the condition of the Blood in Cholera, but has been induced to do so for the following reason: that at the present time it is exceedingly doubtful whether the disease is likely to disappear altogether from this country, or whether the cases, which have already occurred in London, are only the forerunners of a much more severe visitation. If the former should fortunately be the case, the results of the investigations, unless quickly published, would soon lose their interest; if the latter, their being made known may elicit further inquiry into the subject, and hence be a means of causing the important changes, which the blood undergoes in this affection, to be much more satisfactorily determined. His hesitation arises from the analyses having been by no means so numerous or satisfactory as he could wish, on account of the great difficulties which have been experienced in London, during the present epidemic, in procuring blood from Cholera patients when alive. Hence, he has been compelled to make use of that obtained at post-mortem examinations—a proceeding by no means so satisfactory, on account of the probability of partial coagulation having taken place in the vessels, and therefore of the blood not being obtained in its entire state; that is to say, in some cases an undue proportion of the serum, in others, of the cruor, being procured. Frequently also, it is impossible, in such blood, to separate a quantity of serum sufficient for analysis; and therefore, in many cases, the most important portion of the blood cannot be properly examined. As many valuable investigations of the blood in Cholera were made during the last epidemic (1831-32), it may not be uninteresting to the reader, at the present time, to be enabled shortly to survey the results then obtained, and find in what points they agree, and in what they differ, from those recently observed.

With all the attendant difficulties, however, I think we shall be able to demonstrate, that our knowledge of the pathological changes of the blood in Cholera is as perfect as in any other disease, and that, which certainly must be considered as an important fact, we shall be able to solve the following problem. Given, *a specimen of human blood*:—determine *whether it was derived from a Cholera patient.* If we can effect this, it certainly must be allowed, that our knowledge of the blood in Cholera, although confessedly imperfect, far surpasses that in most other affections.

In reviewing the facts which have been well made out, concerning the morbid conditions of the human blood, we shall find, that although much which is exceedingly important has been established, yet that very much still remains to be effected; and that the diseases, in which a pathognomonic condition has been discovered, are very few in number. Among these, we may enumerate inflammatory affections, characterized by the constant increase of the amount of the fibrine; anæmic conditions of the system, by the diminution of the amount of the blood corpuscles; certain affections of the kidneys, by the great diminution of the albumen of the serum, and, at the same time, an accumulation of urea in the blood; gout, by the existence of uric acid in the blood; diabetes, by the presence of sugar; and icterus, by the colouring principle of the bile being found in the circulating fluid. These are the most important facts that we possess on the subject, and, it will be observed, that some, even of these changes, only indicate general conditions of the system, and will not enable us to form an opinion as to the individual organ affected; thus we find, as far as our analyses will enable us to judge, the same state of blood in pneumonia, pleuritis, peritonitis, acute rheumatism, etc., although no doubt many important differences really exist; at present, we only have the power of ascertaining that inflammation is going on somewhere in the system, and of judging of the structures affected, or of the intensity of that inflammation, by the amount of increase which the fibrine has experienced. Again, from an examination of the blood, we cannot determine from whence an anæmic condition of that fluid proceeds, whether it arises from loss of blood, from bad nutrition, chlorosis, the poison of lead, etc. Taking, then, into consideration how extremely imperfect is the knowledge we possess of the pathology of blood in general, I think we must allow, that should we be able to define a condition of this fluid which is pathognomonic of Cholera, a very important step has been attained.

We shall divide our subject into two parts. The first will contain a short account of the results which were obtained during the former epidemic of Cholera in Europe; the second will treat of the analyses recently performed.

I. CHEMICAL EXAMINATION OF THE BLOOD IN CHOLERA, PREVIOUS TO THE PRESENT EPIDEMIC.

During the years 1831 and 1832, the most active and successful investigators of the chemical pathology of Cholera were, Dr. O'Shaughnessy, Dr. Thomson, and Dr. Clanny, in this country; and on the Continent, MM. Lecanu, Hermann, Rose, and Wittstock. As far as physical characters are concerned, it had been often observed that, in Cholera

patients, the blood drawn during life, and, also that found in the large vessels after death, exhibited a condition differing from that seen in a state of health, or after death, from most other causes. On this point Dr. Ainsley observes, that he always found the large veins, both of the general and portal system, the sinuses of the brain, and the right cavities of the heart, loaded with a *thick, viscid, and black blood;* and when blood was found in the left cavities of the heart, it had a similar appearance. The lungs, and all the internal viscera, presented a greater or less degree of congestion from *pitchy* or *black blood*. Dr. Ainsley also states, that the blood exhibited morbid appearances, even when drawn from the patient at an early period of the disease; and as this advanced to a fatal issue, the characters above described were most manifest. He also considers this state of blood as one of the earliest links in the chain of effects, consequent on the invasion of the efficient causes of the disease, and a strong diagnostic mark. A similar appearance of the blood has been remarked by many others. Lecanu analysed the blood of four patients suffering from Cholera, with a view of discovering the amount of solid matter and water contained in it, and he found—

	1st Case.	2nd Case.	3rd Case.	4th Case.
Water	660	749	480	670
Solids	340	251	520	330
	1000	1000	1000	1000

Now the mean of ten analyses, made by the same observer, of healthy venous blood, taken from individuals from twenty-six to sixty-two years of age, gave in round numbers—

Water	789
Solids	211
	1000

It thus appears, that the watery portion of the blood is very deficient, the solids in one case being nearly double the amount found in health. The fibrine was deficient in quantity, and the blood corpuscles were increased in number.

Wittstock found, in a case of Cholera, that the blood was healthy in appearance, the clot of a scarlet red colour on the surface, but darker than usual in the interior. The serum had a specific gravity of 1028·5, and in 1000 parts contained 137·5 of solid matters.

1000 parts of blood gave—

Water	740·00
Solids	260·00
Blood corpuscles	124·48
Fibrine	11·80
Albumen	110·42
Extractives and Salts	14·10

The fibrine in this analysis was undoubtedly estimated far too high, for 11 parts of this proximate principle cannot exist in the 1000 parts of blood without causing a decidedly abnormal appearance, which, as stated above, was not observed; and many other instances are on record, as in Dr. Clanny's analyses, where the fibrine was only washed and pressed, but not thoroughly dried, and, consequently, the figure in the

table increased four or five fold. It will be seen that the specific gravity of the serum is greatly above the normal average, (which may be taken as 1028, water being 1000); and I may mention here, that an increase of 10 parts in the 1000 in the specific gravity of the serum is an alteration of the gravest importance, for this portion of the blood remains remarkably fixed in the proportion of its normal constituents, and a notable increase or decrease is not induced, except by the presence of deep-seated and dangerous disease. The total amount of solids in the blood is seen in this case to be much larger than in health, which, as mentioned above, were found by Lecanu to be about 211 parts in the 1000; this was due, in a great measure, to the large proportion of albumen, for 110 parts were contained in the 1000 of blood, in place of 69 parts, the mean amount in health. The red corpuscles appear to have been in about the usual quantity; the extractives and salts were estimated together, and with them the fatty matters were probably included, so that little can be made out concerning them.

M. Hermann, of Moscow, made an analysis of the blood, taken a few hours before death, from a man suffering from Cholera, and found it of a very viscid consistence, and dark in colour. The proportion of crassamentum to serum was as 60 to 40; whereas in health, the relation is about 43 to 57; thus indicating a considerable deficiency in the watery portion of the blood. The serum was alkaline, of specific gravity 1036. The crassamentum is stated to have been acid in reaction.

In the *Gazette Médicale de Paris* (Jan. 14, 1832) are contained the results of the analyses of Cholera blood, made by MM. Rose and Wittstock of Berlin, which are thus stated:

"MM. Rose and Wittstock have communicated to us the results of their experiments on the blood of persons labouring under Cholera. Despite of all the exactitude of their researches, they could not find the acid character of the blood, which M. Hermann asserted to exist. They have observed, that when the blood contained in the right ventricle of the heart of the Cholera patient is dried with great care, 30 parts per cent. of solid matter are invariably obtained; while, in the state of health, the blood only affords 21 per cent. This morbid proportion has been constantly found, as well in the blood of children as of old persons; neither did sex occasion any difference in the results. The serum of the blood of a young man, ætat. 20, who died of intense Cholera, was of specific gravity 1047, and afforded, when dried, 16 parts per cent. of solid matter. In a young woman, in good health, MM. Rose and Wittstock found the specific gravity 1028, and the serum only contained 9½ per cent. of solid matter. The dejections were strongly alkaline, and contained albumen. These experiments, frequently repeated at the Cholera Hospitals of Berlin, have invariably been attended with the same results."

We have now to speak of the researches of Dr. O'Shaughnessy, which are far more extensive and elaborate than those already detailed; he adopted the method then recently proposed by Lecanu, and used his analysis of healthy blood and serum as standards of comparison. His results are contained in a *Report on the Chemical Pathology of Malignant Cholera*, 1832. The analyses there published contain also some account of the patients from whom the blood was derived; and I will make

extracts from the pamphlet, as it is very important to know the condition of the patient at the time the blood is obtained.[1]

"Case I. *Malignant Cholera.* Mrs. Barras, æt. 39, widow, of excellent habits, good general health, in rather comfortable circumstances, and residing in a lane adjoining the river, Sandgate, Newcastle, was seized with cramps, epigastric pain, and giddiness, at about 10 p. m., on the night of the 17th December. According to the statement of her female friends, she soon after became deadly cold, her countenance altered to the expression of death, she lost all voluntary power, and her eyes became deeply sunk in their orbits. In this state she is reported to have spent the night, having vomited and been purged about six times. A more precise history could not be obtained.

"At 9 a. m. on the 18th, she was seen by Mr. Nesham, by whose direction a vein was opened in the arm. The blood issued difficultly, was at first viscid and very dark, but it subsequently assumed a more lively colour. The blood was placed aside, in a small basin, and at 11 a. m. (when I arrived) had separated into a loose, bulky crassamentum, and transparent, but unusually viscid, serum. The crassamentum having been disturbed and broken up by some of the gentlemen present, the serum only was removed for analysis. The patient passed no urine from the commencement of the attack, until its fatal termination on the night of the 18th December. The analysis of the serum is given in the table below.

"Case II. *Intensely Malignant Cholera.* Occurred in the Cholera Hospital, Sandgate, Newcastle, on the 21st December. The patient, James Dewar, aged 39, a sailor, of good habits and colossal frame, was attacked at 6 a. m., on board the smack Nimble, of Leith, with spasms, cramps, purging, and vomiting of the peculiar fluid, which I need not describe. At 9 a. m. he was brought to the Cholera Hospital. Soon after his arrival, he passed a copious characteristic dejection, which was preserved for analysis. He was then given a little ammonia. Another evacuation followed in about ten minutes, and was also set apart. When I saw this patient at 11 a. m., he was perfectly pulseless and cold, his face contracted, and of a tarnished silvery or fishy aspect; he suffered horribly from cramps, and uttered cries like one shouting through a barrel. It was, on the whole, the worst case but one that I witnessed during my stay in the infected districts. A little after 11 a. m., some blood was taken from an orifice in each arm, and about eight ounces, dark in colour and viscid in consistence, were with some difficulty obtained; the patient writhing about his bed so constantly, that the blood could not be preserved from contact with the atmosphere. This blood was also set aside for analysis. Before leaving the ward, I tested the dejections with yellow turmeric paper, and that passed before the ammonia was given, changed the colour of the paper to a deep permanent brown. I should add, it had been ascertained that he had taken no medicines previous to his admission into the hospital. Notwithstanding the most assiduous attention and active treatment, Dewar died the same day at 4 p. m. The serum and coagulum, when

[1] A few copies of this valuable pamphlet are, I believe, still to be obtained from the publisher, Mr. Highley, Fleet street.

carefully separated and weighed, were in the proportion of 43 serum and 57 crassamentum, by which an extraordinary loss in the aqueous portion of the blood was pointed out. The crassamentum was then examined, and found normal in the proportion of its ingredients, so that the addition of a certain quantity of water would have restored it to its original density, proportions, etc. The serum was of the specific gravity 1045, and was devoid of the least action on litmus or turmeric papers; it composition is seen in the table below. Under the microscope, no alteration could be detected in the structure of the blood disks."

Dr. O'Shaughnessy also analysed the blood of a patient, who was labouring under severe bilious and fæculent diarrhœa with vomiting, and the results obtained from the serum are seen in the table: the crassamentum was stated to be found quite normal in its ingredients and their proportions.

Table of Analyses of Serum in Health (Lecanu), *Bilious Diarrhœa, and Malignant Cholera* (Dr. O'Shaughnessy).

	Healthy standard (Lecanu).	Bilious Diarrhœa.	Malignant Cholera. Mrs. Barras.	Malignant Cholera. Dewar.
Specific gravity	1028	1028	1041	1045
Reaction	Alkaline.	Alkaline.	Neutral.	Neutral.
Water	906·00	921·75	854·00	866·80
Albumen	78·00	61·85	133·00	124·00
Urea	0·00	0·00	0·40	0·00
Organic matter, soluble in alcohol and water	1.69	5.20	4·80	4·00
Albuminate of Soda	2·10			
Fatty matters: Crystalline	1·20	1·90	1·40	1·23
„ Oily	1·00			
Chloride of Sodium and Potassium	6·00	5·00	4·00	2·17
Carbonate of Soda, Phosphate of Soda, Sulphate of Soda	2·10	[1] 2·30		0·50
Insoluble Salts, Phosphates and Carbonates of Lime, Magnesia, and Iron	0·91	1·10	1·60[2]	0·70
Loss	1·00	0·90	0·80	1·50
	1000·00	1000·00	1000·00	1000·00

Dr. O'Shaughnessy also mentioned in his Essay, that he had examined the blood in two other cases; in one, the composition agreed, in every essential particular, with Dewar's blood (case 2); in the other, with that obtained from Mrs. Barras. The history of the first case was not known, the other patient's disease was of a protracted type.

After the publication of his Essay, Dr. O'Shaughnessy had the opportunity of making further experiments in London, and he found that the specific gravity of the serum, in four specimens, was as follows:

[1] The 5·00 and 2·30, in the second column, should be estimated together, as part of the phosphates, sulphates, and carbonate of soda were included under the figure 5·00.

[2] In the third column, the carbonate of soda only was stated to be absent, a small amount of sulphate and phosphate being included with the insoluble salts.

1st Case	1042·7	3rd Case	1047·0
2nd —	1054·4	4th —	1051·3

And the amount of colouring matter in the same specimens of blood, with the addition of the two Newcastle cases, estimated according to Prevost and Dumas' method, viz., by assuming the fluid portion of the clot to be serum, was—

1st Case	162·5	4th Case	147·0
2nd —	156·0	5th —	112·8
3rd —	164·3	6th —	136·0

We shall next speak of the analyses made by Dr. Thomson, of Glasgow. The relation he finds existing between the crassamentum and serum in Cholera blood, to a certain extent, gives us an insight into the amount of loss which the fluid portion of the blood has undergone; but it must be borne in mind, that the relation between these may be altered by other circumstances; for the clot consists of the blood corpuscles held together in the form of a mass by a very fine network of coagulated fibrine, enclosing also a certain amount of serum. Now the closeness or density of this clot may be modified by the physical condition, as well as the amount, of fibrine, which may possess very different degrees of elasticity and toughness; it may therefore form a soft and large, or a small and firm clot, even when the ratio between the solid and liquid portions of the blood remains the same,—much more serum being retained within its meshes in the former case. Again, the shape of the vessel, in which the blood is collected, may influence considerably the size of the clot: thus, in an experiment, when separate quantities of the same blood were drawn in a flask and in an open basin, the proportion of crassamentum was found to differ considerably, being in ratio of 13 in the flask to 21 in the open basin. If, however, care be taken to avoid these liabilities to fallacy, by using similar-shaped vessels, and noticing the density of the clot, we can, from such observations, arrive at conclusions which are tolerably correct.

Assuming, then, the ratio between the serum and crassamentum in healthy blood to be as 57 : 43, Dr. Thomson, in five specimens of Cholera blood, found the proportions as follows:

Case.	Serum.	Crassamentum.
1.	32·34	67·66
2.	32·00	68·00
3.	38.45	62·58
4.	35·66	64·34
5.	27.59	72·41

Here we see the ratio, existing in health between the serum and crassamentum, more than reversed. Dr. Thomson also further examined the serum, and found the specific gravity of the different specimens to be, in the

1st Case	1044·6	.. pure yellow serum.
2nd —	1044·3	.. slightly tinged red.
3rd —	1032·0	.. very red.
4th —	1035·0	.. very red.
5th —	1037·0	.. very deep red.
Average healthy serum	1028,0	

He also estimated the water and solid constituents of the serum in these different specimens of blood, and his results, compared with Dr. Marcet's analysis of healthy serum, are seen in the following table.

	Case.	Water.	Albumen, Salts, etc.
Healthy serum	—	900	100
Cholera serum	1	839·5	160·5
——	2	839·6	160·4
——	3	811·7	188·3
——	4	811·0	189·0
——	5	808·2	191·8

Dr. Thomson also attempted to discover the proportion of the albumen and salts in serum No. 1; and then found, that of the 160·5 parts of solid matter, 150·15 consisted of albumen and 10·35 of salts, with which, however, he included the organic matter of the serum, which was soluble in boiling water, and therefore the figure 10·35 represents what is usually included under the head of salts and extractive matters. From this one analysis, Dr. Thomson calculates the ratio between the albumen and salts in the remaining four specimens of serum; this, of course, must be considered as a very unsatisfactory mode of proceeding, especially in examinations of blood in a disease, where it has by no means been proved that the different constituents of that fluid are always altered in the same proportion. Dr. O'Shaughnessy has attempted to deduce the amount of real salts from the analysis given by Dr. Thomson, but I think it unwise to do so, and we had better remain satisfied with such information as the experiments warrant us in arriving at. Again, with regard to the colouring matter of the blood in Cholera, Dr. Thomson has given his results, but his mode of analysis employed to separate the former substance is very faulty, and, consequently, unsatisfactory. As to the fibrine, I think we have other analyses on this point which can be more depended on.

Lastly, Dr. Clanny made several analyses of Cholera blood, and although the methods employed by him may not, perhaps, bear criticism, yet as they were compared with healthy blood, the composition of which was determined in a similar manner, some of the results are valuable; they show that, in Cholera, there is a loss of the watery portion of the blood; that the globules and other organic solids are increased; that the fibrine is usually diminished; and that the physical condition of the blood is also altered, by its becoming dark in colour and thick in consistence.

Besides the analyses which have been given above, many others were performed during the last epidemic, some as to the composition of the entire blood, others merely for the purpose of determining certain points. These I have thought it unnecessary to detail, for the chemistry of organic fluids was at that time very imperfect, (especially before the appearance of the admirable essay of Lecanu, entitled *Nouvelles Recherches sur le Sang*); and consequently but little confidence would at the present time be placed in some of the analyses. With regard, however, to the detection of urea in the blood of Cholera patients, I may observe, that it was found by Marchand, Heller, Simon, and Rainy; others were unsuccessful in the search; we have already seen that Dr. O'Shaughnessy detected it in the first case (Mrs. Barras), but not in the second (Dewar). Urea was also found in the bile, and by Dr. Christison in a serous effusion on the brain of a patient dying of Cholera.

On reviewing the analyses, which are given above, we shall be enabled

to form some general conclusions as to the condition of the blood in Cholera; but previous to so doing, I think it will be well to make some remarks on the detail of these analyses. And first, with regard to the physical condition of Cholera blood;—nearly all observers are agreed on this point, viz., that the consistence and colour are altered, that it becomes much more viscid than natural, and usually darker in colour and less coagulable; the extent, however, of these changes appears to depend much on the stage when the blood is drawn. Next, with regard to the alteration which it undergoes in composition.

Water. All the analyses given above, show that this portion of the blood becomes much diminished in quantity: this is seen from the experiments of Lecann, Wittstock, Hermann, O'Shaughnessy, Thomson, and Clanny. There seems to be no discrepancy of opinion on this point; the same remarks apply, of course, to the increase of the solid constituents of this fluid.

Blood Globules or Red colouring Matter. Most observers have found that this portion of the solid matters of the blood becomes increased in amount; but others, as Dr. O'Shaughnessy, think that it is not necessarily increased beyond the normal standard; most of his results, however, show such an augmentation The different modes of separating this principle have, doubtless, led to much of the discrepancy observed in the analyses. Dr. O'Shaughnessy, in criticising the results obtained by Dr. Thomson, states, that the method employed by himself "shows precisely and infallibly the quantity of colouring matter"; but I think I have evidence sufficient to prove, that it is liable to very considerable error, and that the assumption, that the fluid contained in the clot is of the same nature as serum, is by no means correct.

Fibrine. From what we have seen above, it would appear that this principle is liable to great alteration in Cholera blood: in general (but not necessarily), it would seem to be diminished in quantity.

Composition of the Serum. All the analyses agree in showing that this part of the blood is especially affected in this disease. One of the most important alterations, which it undergoes, consists in the diminution of its watery portion, and consequent increase in its solid constituents, a change indicated by its high specific gravity. From the numerous observations on this point, we have found that it has varied between 1036 and 1057, the lowest 8, the highest being 29 points above the average weight in health—viz., 1028. It would also appear that there is a considerable tendency to its becoming less alkaline, and even neutral, in its reaction. (O'Shaughnessy).

Albumen. If we estimate this body in relation to the water of the serum, we find that its proportion is always increased in Cholera, and it is chiefly to this augmentation that the high density of the fluid is due: all the results given above show this fact: but if the albumen be estimated in the 1000 parts of the blood itself, then there are considerable discrepancies in the different analyses. The reason of this it is not difficult to discover; for, by the methods employed by some, a considerable amount of the albumen was included under the head of colouring matter, thereby increasing the figure of the latter principle, and diminishing that of the former. It is, however, easy to understand

how the albumen may be greatly increased in the serum, yet even diminished in the blood, taken as a whole; for the serous portion (including albumen) might be lessened in quantity, from intestinal evacuations, to such an extent, that the absolute amount of albumen in a given quantity of blood should be below the normal amount. I believe, however, as Dr. O'Shaughnessy has stated, that such was not the case in the blood examined at that period.

Salts. Concerning the alterations in the saline portion of the blood, very much has been written, and from the results obtained in some of the analyses, peculiar methods for the treatment of Cholera have been proposed and employed. It is therefore exceedingly important to examine this point, and see what value should be attached to the experiments, upon which the conclusion, as to great diminution of the salts of the blood in Cholera, is based.

If we examine the table given above, containing the results of the analyses of the serum in health by Lecanu, in a case of bilious diarrhœa, and in two cases of Cholera by Dr. O'Shaughnessy, we observe that Lecanu, in healthy serum, finds 8·1 parts of soluble salts in the 1000 parts of serum, of which 6 parts consist of chlorides, the remaining 2·1 parts of soluble phosphates, sulphates, and carbonates, which are not individually estimated. Dr. O'Shaughnessy, by employing the method of Lecanu, finds, in the first case (Mrs. Barras,) only 4 parts of chlorides, no carbonate of soda, and very small quantities of the sulphates and phosphates, which he estimates with the insoluble salts. In the second case (Dewar,) he finds a still smaller amount, only 2·17 parts of chlorides, and of soluble phosphates and sulphates, and carbonates, 0·5 parts: in the case of bilious diarrhœa, 5 parts of chlorides were found, and 2·30 of phosphates and sulphates, and carbonates. Granting the accuracy of these experiments, we should arrive at once at the conclusion, that, in Cholera, the saline portion of the serum undergoes a remarkable diminution. I may, however, mention, that when Dr. O'Shaughnessy made these analyses, the Essay of Lecanu had but just appeared, and that by the method adopted by this chemist for ascertaining the amount of salts, great care is necessary, and I might add, some considerable experience, to enable the experimenter to collect the whole of the saline matter; and I think that it is possible that the estimates given in the table may be below the real amounts which existed in those specimens of serum: still, however, in the case of bilious diarrhœa, the quantities nearly approached Lecanu's standard. I venture to suggest this, not from any desire to cast the slightest doubt on the accuracy of Dr. O'Shaughnessy, but from the circumstance of others not having found such deficiency in serum, which in other respects resembled that operated upon by him. That errors must exist somewhere in these analyses, I think can be shown from the fact, that the serum in the case of bilious diarrhœa, stated to be of specific gravity 1028, the same figure as that given by Lecanu for his standard serum, contained of solids, in all, 78·25 parts in the 1000, whereas Lecanu found 94·00; and to show that this difference did not depend on the different proportions of the organic and inorganic constituents, it is found, that not only were the total solids, but also both the organic and inorganic portions, in larger amount in the serum analysed by

Lecanu. Again, if we compare the serum of Mrs. Barras, specific gravity 1041, with that from Dewar, specific gravity 1045, we find that, although there is as much as four points difference in weight, both the organic and the inorganic portion of the solid contents of the former were greater than those existing in the latter. It is certainly impossible to explain these facts, except by assuming that some error existed in the analyses. Dr. Thomson came to the conclusion, that the salts were not diminished in Cholera blood; but, as stated before, the extractive matters were estimated with this portion, and therefore the separate determination of the salts can only be a matter of speculation. There is another reason for my supposing that the salts in Dr. O'Shaughnessy's analyses of Cholera blood may possibly be estimated too low; namely, that in two examinations of serum of specific gravity very much the same as that of case 2 (Mrs. Barras,) I failed to find such a diminution, although the experiments were repeatedly and very carefully performed; but of this we shall again have occasion to speak. With regard to the amount of salts in the remaining four specimens of serum, of which Dr. O'Shaughnessy ascertained the specific gravity, I am not aware that any estimation was ever made.

The conclusions, to be drawn from these researches, may be stated as follows:—

1. That in Cholera, the physical characters of the blood are altered, and that its tendency is to become thicker, tar-like, and less coagulable.

2. That the proportion of water is much diminished.

3. That the specific gravity of the serum is very high, which is due to the increase of the solid portion of the serum, and especially of the albumen; and that this fluid also tends to become less alkaline in its reaction.

4. That with regard to the salts of the serum, some doubt exists as to their excessive diminution.

5. That urea sometimes exists in Cholera blood.

At the end of the second part of our paper, we shall see whether any of these conclusions are affected by more recent analyses; and also, whether any further results can be with safety deduced.

II. RESULTS OF ANALYSES OF CHOLERA BLOOD MADE DURING THE PRESENT EPIDEMIC.

The analyses, which we are next about to detail, were made upon eight specimens of Cholera blood, in some of which, from their quantity or condition, only certain points could be determined with accuracy. Two of these analyses were performed by my friend Dr. Parkes, the remainder by myself; and I may again mention, that the want of more thorough investigation has been due, not to any lack of zeal in pursuing the subject, but to the great difficulty experienced in procuring the fluid for analysis.

It may be as well, before treating of these details, to mention some analyses of healthy blood, so that we may be enabled more readily to compare the results, which we may obtain in our examinations of the diseased fluid, with those observed in health. I will first give a table shewing the composition of the blood of healthy males and females, according to Becquerel and Rodier.

Composition of Human Blood. Adult Male in the 1000 *parts.*

	Mean.	Maximum.	Minimum.
Density of defibrinated blood	1060·2	1062·0	1058·0
——— Serum	1028·0	1030·0	1027·0
Water	779·0	800·0	760·0
Solids	221·0	240·0	200·0
Blood globules	141·1	152·0	131·0
Fibrin	2·2	3·5	1·5
Albumen	69·4	73·0	62·0
Extractives and free salts	6·8	8·0	5·0
Fatty matters	1·600	3·255	1·000
1000 Parts of Blood after calcination yielded.			
Chloride of sodium	3.1	4·2	2·3
Soluble Phosphates, &c.	2·5	3.2	2·0
Insoluble Phosphates, &c.	·334	·700	·225
Iron	·565	·633	·508

Human Blood. Adult Female in 1000 *parts.*

	Mean.	Maximum.	Minimum.
Density of defibrinated blood	1057·5	1060·0	1054·0
——— serum	1027·4	1030·0	1026·0
Water	791·1	813·0	773·0
Solids	208·9	227·0	187·0
Blood globules	127·2	137·5	113·0
Fibrin	2·2	2·5	1·8
Albumen	70.5	75·5	65·0
Extractives and free salts	7·4	8·5	6·2
Fatty matters	1·620	2·860	1·0
1000 Parts of Blood after calcination yielded.			
Chloride of sodium	3·9	4·0	3·5
Soluble phosphates, &c.	2·9	3·0	2·5
Insoluble phosphates	·354	·650	·250
Iron	·541	·575	·486

As these analyses very much accord with those made by myself on healthy human blood, I shall use them for the purpose of comparison. As regards the serum, we may take Lecanu's standard, which has been given in Part I; and I may state that, for the purpose of ensuring accuracy in the analyses of morbid serum, I have employed the same method, and obtained figures representing the proportion of the most important constituents of this fluid, as derived from a healthy patient.

This analysis is seen below.

Serum. Specific gravity 1027·9. Alkaline in reaction; contained in 1000 parts.—

Water	909·25
Solids	90·75
Albumen, Fatty and extractive matters	80·48
Soluble salts	9·34
Insoluble salts	0·93

The methods employed in performing these examinations of blood and of serum were as follows:

Analysis of Blood. The physical characters of the fluid were first noticed, also the reaction which it exhibited with blue and red litmus papers; the specific gravity was afterwards ascertained. If the blood was in such a condition that it would neither coagulate nor allow the globules to subside, a weighed portion was at once evaporated to dryness;

and, after it had ceased to lose weight by exposure for some little time to a temperature a little above 212° Fahrenheit, the amount of the solid residue was ascertained: by this operation, the *water* and *total solids* were obtained. The residue was then carefully burnt in a platina crucible; and, after the charred mass had been exposed to a red heat for a short time, and it had ceased to give off any odour, the weight of the black mass, consisting of the inorganic constituents together with carbon, was ascertained; it was then boiled several times in distilled water, for the purpose of removing all the soluble salts, and thoroughly dried and reweighed; the loss indicating the quantity of soluble salts, with the exception of a small amount, which is retained very strongly by the carbon. The carbonaceous mass was then exposed to a bright red heat for some little time, until all the carbon had been burnt off; the residue consisting of the insoluble salts, with a trace of the soluble salts spoken of above: these were separated by washing, and their quantities ascertained. All the numbers were then reduced to the 1000 parts. In analysing the serum for its saline constituents, the method above detailed was employed, and the albumen afterwards determined from a separate portion. The blood globules were estimated according to the method of Prevost and Dumas, or of Becquerel and Rodier. The fluid contained in the clot was regarded as serum. The urea was estimated by exhausting the dried blood with alcohol, and adding strong nitric acid to a concentrated watery solution of the alcoholic extract. The presence of uric acid was determined, by exhausting with water the dried blood, which had been previously acted upon by alcohol, for the purpose of extracting the urea, and then employing the murexide test, or precipitating the uric acid by the addition of acetic acid to the concentrated watery solution.

Case I. The first case occurred in one of the Tooting children, Michael Harper, ætat. 9; he was seized about nine o'clock P.M., and died on the following day about half-past one P.M. Having passed one very copious evacuation, and another more scanty, he sank into a state of collapse; before death, the rice-water fluid had soaked through the bed; he vomited at intervals during his illness, and the urine was probably suppressed. A *post-mortem* was made thirty-eight hours after death.

General Appearances. Rigidity was present in the jaw and in all the large joints, but not so well marked in the toes; the surface of the body was not livid, but had a mottled appearance; the nails of the left hand, however, were livid; the teeth were covered with sordes; the body weighed forty-five pounds avoirdupois.

Head. On opening the head, the large sinuses of the dura mater were found filled with blood; the veins of the pia mater were also turgid, so as to give the brain a congested appearance. On making a section of the brain, the distinction between the grey and white matter was strongly marked; in the latter the red points were pretty numerous, in consistence both were normal; a very small amount of fluid was found in the lateral ventricles. Weight of the cerebrum, 42 oz.; of the cerebellum, 5 oz.; of the medulla oblongata and pons Varolii, 6 drachms. Nothing remarkable was found, on making sections of these different parts. The sinuses at the base of the skull were full of blood.

Thorax. On opening the chest, the lungs were found universally

adherent, the adhesions being tough, and doubtless produced by old pleuritic inflammations. The right lung was of small volume, sparingly crepitant; on section the colour was dark, the substance firm but not hepatized, and it did not contain much blood or serum; there was no consolidation at the apex, nor were tubercles found throughout the substance; the bronchial tubes contained some frothy mucus. The left lung was lighter in colour than the right, but still of a deep red; on pressure, much blood exuded from the small vessels, particularly from the inferior and depending portions; no tubercles were observed; the bronchial tubes contained a little frothy mucus. The larynx and trachea were healthy, and exhibited but slight vascularity.

Heart, &c. The pericardium was healthy, and contained no fluid. The heart weighed four ounces and two drachms; the right auricle was much engorged, and contained a large but partially decolorized clot; the right ventricle contained a large colourless, very soft coagulum; in the left ventricle was found a small colourless coagulum. The substance of the whole organ was healthy.

Œsophagus, &c. The mucous membrane of the pharynx and œsophagus was natural.

Stomach. The peritoneal surface was pale, the mucous membrane but very slightly vascular, not softened, containing a small quantity of a thickish dark brown fluid, smelling of port wine—about ʒiv. in quantity.

Small Intestines. The peritoneal surface had a tolerably well-marked vermillion tint. In the duodenum the glands of Brunner, and also the solitary glands were enlarged. In the ileum, the solitary glands were also strongly marked, and Peyer's glands elevated and red in colour.

Colon not contracted; its peritoneal surface was pale, and the glands were enlarged in the ascending portion. In the descending and transverse portions, the mucous membrane was pale.

Liver. Weight twenty-one ounces, two drachms; was adherent to the diaphragm over the greater portion of the right side. The gall bladder was moderately distended with bile of a deep green colour, and of viscid consistence.

Spleen weighed two ounces and six drachms, and appeared healthy in structure.

Kidneys. The right weighed two ounces and two drachms, the left two ounces. In both, the substance was healthy, and the capsule easily separable.

The Bladder was quite empty and very firmly contracted (like a ball).

The blood in the sinuses of the brain, heart, and large vessels, was not coagulated, but had a consistence and appearance not very unlike tar.

The mesenteric glands were not enlarged, the omentum contained but a very small quantity of fat, and on the walls of the abdomen a layer of that substance was found, not measuring more than one-fifth of an inch. In the small intestines was contained some fluid, of the consistence of gruel, and about three or four ounces in quantity, which possessed an alkaline reaction, and under the microscope presented the appearances which are exhibited by the rice-water evacuations of cholera

patients, the deposit consisting of cylindrical epithelium scales, organic globules, etc. The contents of the intestines were, however, much thicker than the watery evacuations usually passed during life, but were similar to those, which have frequently been found after death in cholera patients.

On allowing the thick fluid to remain for some time in a glass, it separated into two parts, the clear portion being uppermost. This was found to contain a large amount of albumen, but no trace of *bile*. It did not give the pink tint which cholera stools frequently exhibit when treated with nitric acid, but this I have found to be not unusual in the latter stools passed by cholera patients. The blood was of a very dark colour, but became slightly reddened by exposure to the air. It did not coagulate; but, on minute examination, small specks were found in it, consisting of very soft fibrine; when allowed to remain at rest for some hours, the blood scarcely exhibited a layer of serum on its surface, and it would not pass through coarse filtering paper, as is the case generally with this fluid. Under the microscope, the globules were seen to be very numerous, and some irregular in shape. Specific gravity of the blood 1076.5, at 45° F.; reaction slightly alkaline.

Composition in 1000 parts.

Water	729
Solids	271
Blood globules } Albumen, &c. }	260·2
Soluble salts } Insoluble ditto }	10·8

No urea was detected; traces of uric acid were however found, which would probably indicate the presence of urea also; but the amount of blood used for this experiment was small. I may remark that the quantity used, to determine the salts, was likewise very small.

Another analysis was made of the top portion of the same blood, after a partial subsidence of the blood globules had taken place, and in 1000 parts it was found to contain:

Water	851·4
Solids	148·6
Blood globules } Albumen, &c. &c. }	133·9
Soluble salts	12·6
Insoluble ditto...	2·1

Here we find, that when more serum was present in the blood, the soluble salts were greatly increased and the insoluble decreased, at the same time that the total solids were diminished: hence, if the serum could have been separately determined, it would doubtless have shown a very large proportion of salts.

Case II. The second case also occurred in one of the Tooting children, James Andrews, ætat. 6 years. He was suffering from diarrhœa when removed from Tooting, and at half-past six in the following morning was seized with vomiting and collapse, and died at half-past eleven. The evacuations were characteristic, but their amount not ascertained. He was stated to have been purged five or six times.

The *post mortem* was made 140 hours after death.

General appearance. Rigidity nearly gone off in the lower extremities, quite so in the jaw and upper extremities; the surface not livid, but mottled, with red patches, with the exception of the abdomen, which had a yellowish green appearance. The nails of the fingers and toes were livid, the skin of the soles of the feet was wrinkled; the body had not undergone any decomposition, although death had occurred so long before.

Head. The sinuses of the dura mater contained some thick dark-coloured blood, and the veins of the pia mater were full of the same fluid. In the substance of the brain, the grey and white matters were well contrasted. Very small amount of fluid in the ventricles. The cerebellum and medulla appeared quite healthy.

Chest. The pleura was very slightly adherent at the left side, and at the base of the right lung, which was slightly congested, but intact; left lung very slightly congested; no tubercular deposition. The bronchial glands were rather enlarged.

Heart. No polypi were found either in auricles or ventricles, but a very small thread-like and whitish coagulum in the first portion of the aorta, the consistence of which was soft. The heart was of the natural size, and the substance healthy.

On making a section of the abdominal walls, a layer of fat, about one-fifteenth of an inch, was found, and the omentum scarcely contained any of that substance. The mesenteric glands were considerably enlarged, and contained deposits of tubercular matter.

Stomach. Peritoneal surface healthy. Mucous membrane not softened, but stained red in patches. A small quantity of a thickish fluid was found in the cavity of the organ.

Intestines, &c. The peritoneal surface of the small intestines had a vermillion tint, from the injection of the small blood vessels. The mucous membrane was not softened; in the lower portion of the ileum, the solitary glands were very prominent. A small quantity of a thickish white matter was found on the surface of the mucous membrane, which exhibited the same appearances under the microscope, as that found in the intestines of the last case. The large intestine presented a greyish white appearance on its peritoneal surface, and its mucous membrane was healthy.

Liver, etc. Substance of this organ healthy; gall-bladder filled with bile, of moderate consistence, and of a yellowish brown colour. Spleen healthy.

Kidneys. Quite healthy; the urinary bladder strongly contracted.

The blood was of similar character in all parts of the body; that found in the heart and large vessels was used for analysis. It was of a dark colour and treacle-like consistence; the specific gravity was not ascertained, on account of the small quantity procured. The globules did not subside when the fluid was allowed to rest, and minute specks of fibrine were observed floating in it.

Composition.			
Water			724·5
Solids			275·5
Globules, albumen, etc			262·0
Salts—Soluble	10·7		13·5
Insoluble	2·8		

Urea was not detected; a small quantity of uric acid, however, was crystallised, perhaps a little exceeding in amount that found in health; but for these determinations, as well as for the saline constituents, only a small portion of blood was employed.

For the two following observations and analyses, I am indebted to Dr. Parkes.

Case III. Blood taken from the heart and pulmonary arteries of a young woman, who died in the cold stage of Cholera. It had a dark colour, was thick in consistence, but not coagulated; it did not separate into clot and serum, but had small masses of fibrine and coagula floating in it. It was not certain whether the whole of the fibrine had been removed from the vessels. When exposed to the air, the blood became in part arterialized; but there were many small portions or coagula, which, after twenty-four hours' exposure, remained as black as at first. The *reaction* was alkaline. The fibrine was estimated by washing a weighed portion of the blood, in which the small clots were equally diffused by shaking. There was no difficulty in washing the fibrine quite white; if anything, this was done more easily than usual. In evaporating the blood to get the proportion of solid contents, it was remarkable how easily the drying mass was broken down, and how pulverulent it became, under much slighter pressure than is sufficient to break down healthy and inflammatory blood. As the ingredients of the blood were so mixed up together, it was impossible to do more than estimate the fibrine, the albumen and globules together, the insoluble and soluble salts, and to examine for urea and uric acid. Specific gravity (of whole blood), 1076·22; temp. 62°.

Composition.	Water	729·07	
	Solids	270·93	
			1000·00
Fibrine		88	
Red particles and organic solids of serum		262·61	
Soluble salts		6·15	
Phosphate of lime, phosphate and free oxide of iron ..		1·20	
		270·93	

The solution of the soluble salts was alkaline; their amount was over the figure stated above, as there was a trifling loss; that given was absolutely weighed. The quantity of each salt was not determined; but there was, as is usual in healthy blood, a great excess of chlorides. The precipitates of the ammoniaco-magnesian phosphate and the sulphates seemed to be in about the usual quantity.

Examination for urea and uric acid. A portion of pulverized blood was thoroughly digested in repeated quantities of alcohol; the alcohol distilled off, and the residue dissolved in a little distilled water; it was evaporated slowly to a syrup, and a little nitric acid added. After thirty-six hours, no crystals had formed. The blood which had been treated with alcohol was now boiled thoroughly with distilled water; the solution was evaporated; the residue, re-dissolved, evaporated to a very small bulk and treated with hydrochloric acid. After forty-eight hours, no crystals of uric acid had been deposited.

It appears, therefore, that if urea and uric acid were present, they were not in any great quantity. A possible inaccuracy may have occurred in the analysis for urea, as at one time the alcoholic solution was distilled too rapidly, and the urea may have been decomposed. The quantity of fat taken up by the alcohol seemed to be considerable; it was not weighed.

Case iv. Blood from the venæ cavæ of a woman, who died in the cold stage of Cholera. It presented the same physical characters as in the former case; small masses of clot floated in a thick red fluid. The reaction alkaline, but not so strongly marked as usual. Specific gravity 1068·16; temp. 45 Fahr.

Composition.	Water		748·46
	Solids		251·54
			1000·00
Organic constituents of blood		244·263	
Soluble salts		5·72	
Perodide of iron		·884	
Phosphate of lime		·673	
		251·540	

It was not analyzed for urea or uric acid.

Case v. With regard to the next case, it may be well to state, that, as the patient's symptoms during the progress of the disease, the stools passed at the different periods, also the blood abstracted during life, and that found in the vessels after death, were carefully examined, it has been considered advisable to go somewhat into detail, for the purpose of endeavouring to give as complete an account of a case of Cholera as is at present on record. Dr. Parkes undertook the examination of the stools; the analyses of the blood were made by myself: the patient was under the care of Dr. Williams.

William Worts, æt. 39, native of Wicklow (Ireland), admitted into University College Hospital Feb. 1st, 1849, had been a sailor since the age of twelve years; a strong, stout man, having enjoyed good health, but at times had been addicted to hard-drinking. About a month previous to his coming to London (Jan. 28th), he had lived in Liverpool, in a house near the side of the river, and during that period had been very intemperate, and consequently had taken but little solid food. On his arrival in town, he lodged in an inn near the Euston-square railway terminus, and the same night was intoxicated. The next day, Jan. 29, he became cold and shivering, for which he took some spirits; he felt very unwell all that day, vomited several times, and during the night had some pain in the abdomen, and diarrhœa. These symptoms continued during the whole of the 30th, on which day he took no solid food; slight cramps were felt in the calves of the legs at night, when the purging and vomiting became more violent, and the thirst intense, to relieve which he took a large quantity of water. On the 31st, and up to the middle of the next day, Feb. 1st, the above-mentioned symptoms continued unabated, and the cramps increased in intensity.

On admission, at two o'clock, P.M., he was extremely feeble; the hands and face were of a dusky hue, eyes a little sunken, surface warm, pulse 120, but extremely weak; tongue dry, covered with a brown fur

in the centre, but white at the edges. Had been purged several times during the last hour, the stools containing some bile-pigment; vomiting incessant, cramps in arms and legs, voice peculiar; has not passed more than half a pint of urine for the last twenty-four hours.

4 P.M. Feels very cold, face and hands rather more livid, quite dry. Since two o'clock he has passed three stools, still containing bile-pigment; breath becoming cool, and respiration hurried.

8 P.M. Has had only two stools. Pulse rather stronger and surface warmer, thirst continues excessive; has drank seven quarts of toast and water.

11 A.M. Passed a stool, which had the following characters and composition. It separated into two parts, fluid and sediment; the latter rather bulky. The fluid portion was not filtered, but removed by decantation, and had a slightly turbid appearance, and a peculiar faint odour. Reaction, *alkaline;* sp. gr. 1010·3 at 56° Fahr.; with nitric acid and heat, no change of colour was observed, until a considerable quantity of acid had been added, when a slight yellow tint appeared, and a tolerably copious precipitate was thrown down. A trace of uric acid was detected by the murexide test.

Analysis.	Water		984·22
	Solids		15·78
			1000·00
Coagulable organic matter (albumen)		1·9	
Incoagulable organic matter		7·7	
Soluble salts—Chlorides, Phosphates, Sulphates, etc.		6·15	
Insoluble salts (Phosphate of lime, etc.)		·03	
		15·78	

Dr. Parkes remarks, that the high figure of the solids must be in part attributed to the fluid not having been filtered, as it was thought to be too thick.

Feb. 2nd, 1 A.M. Pulse 100, very small, at times almost imperceptible; respirations 26 in the minute; surface cold and dry; tongue and breath cold; skin of hands slightly wrinkled. About four ounces of blood were taken from the arm; after which the pulse became 120, and the respirations 32 in the minute; temperature in the groin 86° Fahr. The blood presented the following characters. It was certainly more viscid than healthy blood, and flowed with some difficulty from the veins; one portion was set aside, in which coagulation took place in a few minutes, and, after a time, a tolerably consistent clot was formed. Another portion was whipped to separate the fibrine. By exposure to air the fluid became slightly reddened, and under the microscope no abnormal appearances were observed. Density of defibrinated blood, 1076 at 50° Fahr.; of serum, 1040 at 60° Fahr.

Composition in 1000 parts.	Water		717·5
	Solids		282·5
Blood globules		166·00	1000·00
Fibrine		3·61	
Albumen		103·50	
Extractive fatty matters, salts, etc.		10·39	
		282·5	

The salts, determined by burning, were found to be, in 1000 parts of blood, 8·32 parts. The soluble and insoluble salts were not separately determined. Urea was found, and in the 1000 parts of blood amounted to 0·38 part. The serum had a slightly reddish tint, a reaction but slightly *alkaline*, specific gravity 1040, and in 1000 parts contained—

Water		862.9
Solids		137·1
		1000·0
Albumen	125·40	
Extractive and fatty matters	2·54	
Soluble salts	8·12	
Insoluble ditto	1·04	
	137·1	

The chlorides separately determined, by direct weighing, amounted to 5·41 parts, and consequently the soluble phosphates, &c. to 2·71 parts.

5 A.M. Pulse 120; respirations 28. Very restless; complains much of exhaustion and pain in the body; has intense thirst, and has taken eight gallons of toast water since 1 o'clock: vomiting continues; breath decidedly cold. He passed one stool about half-past two, which, on examination, gave the following results. It was thicker than the last, not readily separating into two parts; the flaky matter was very abundant, and gelatinous in appearance. The fluid portion, with great difficulty strained through muslin, was white and opaque, of the usual faint odour, and *strongly alkaline* reaction. Specific gravity 1014·5 at 56° Fahrenheit. With heat and a few drops of nitric acid a precipitate fell; a few more drops of acid gave a light pink tint, which was destroyed by additional acid. No bile could be detected by Pettenkoffer's test. (The fluid, however, and not its alcoholic extract, was used in the experiment.)

Analysis. Water			976·2
Solids			23·8
			1000·0
Coagulable organic matter (albumen)		2·93	
Incoagulable organic matter		10·93	
Soluble salts		8·24	
Insoluble salts		1.70	
		23·80	

Dr. Parkes remarks, that the large proportion of incoagulable organic matter in this stool, as in all the others, was evidently owing to the fact, that the fluid was very turbid, and was not filtered, or rather, would not pass through filtering paper. It is worthy of note, however, that the phosphate of lime is, in the analysis of the second stool, much more abundant than in that of the first; and this seems to have some relation to the quantity of incoagulable organic matter.

7. A.M. Surface rather warmer; pulse 130, scarcely perceptible; respirations 33; has had less cramp, and feels easier. A stool was passed between seven and eight: still thicker than the last; of a yellowish brown colour, and in quantity about three ounces. It did not separate into two parts, but the sediment remained suspended; by greatly heating it, however, the sediment was partially thrown down. The stool was esti-

mated as a whole. Odour peculiar, slightly faeculent. Reaction markedly *alkaline*. Specific gravity 1017·2. Temperature 56° Fahrenheit.

Composition of fluid and sediment together.

Water	964·78
Solids	35·22
	1000·00

The organic matter, soluble salts, and phosphate of lime, were not determined. The solution of the dried solids was alkaline, like the stool.

Another small stool, passed about a quarter past eight, only one ounce and a half in quantity, was of a brownish yellow colour. Not further examined.

11 A.M. Pulse 120; stronger, has no pain, and is less restless; has passed one stool, about three ounces; whiter in colour than the two last, but still very thick. After twenty-four hours it had partially separated into a fluid and a bulky sediment, which consisted of a yellowish gelatinous looking matter, having white flakes distributed through it.

1 P.M. Pulse 110; respirations 22; temperature of mouth 87° Fahrenheit, of axilla 93°, of groin 94°; complains of burning heat at the epigastrium, and vomits frequently. He passed a stool about twelve, not more than two ounces in quantity, much thinner than the three last, and partially separating into a fluid and sediment: fluid opaline and turbid; sediment flocculent. Reaction strongly alkaline: odour as usual, or slightly faeculent. The fluid, strained through muslin, was very turbid. Specific gravity 1014; temp. 60°. The liquid became turbid by heat. On adding a few drops of nitric acid, there was no change of colour, but a precipitate appeared. A few more drops gave a light red tinge; again adding a few drops increased the colour; but a great excess diminished its intensity, yet did not destroy it.

Composition.

Water		986·52
Solids		13·48
		1000·00
Coagulable organic matter	3·50	
Incoagulable and phosphate of lime	1·98	
Soluble salts	8·00	
	13·48	

The soluble salts seemed to contain an unusual proportion of the phosphates, judging from the precipitate of the ammoniacal magnesian phosphate and the yellow phosphate of silver: the quantity was not determined.

7 P.M. Pulse 120; not so weak as before; breath much warmer; temperature of mouth 90°; of axilla 95°; has vomited some green fluid; stools passed at 2 P.M. and at 5. That passed at two o'clock was more copious than the last, and consisted of a turbid yellowish fluid with large white flakes, partly suspended and partly separated. Reaction strongly alkaline. That passed at five o'clock was much thicker, and did not present the rice-water character, nor separate into two parts. It was of a dirty yellow colour, mixed with white flakes. Reaction, slightly alkaline.

11 P.M. Improving: pulse stronger; surface warmer: has passed two stools between eight and half-past ten. The first was much more

consistent, almost uniformly brown, with a very few whitish or yellowish flakes; not copious. Reaction, alkaline. The latter was still more consistent than the previous stool, and had a distinctly fæculent smell; colour brown. Reaction, still decidedly alkaline.

February 3rd, 10 A.M. Pulse stronger; skin warmer; still very thirsty; and continues to vomit: the fluid from the stomach always showed a strongly acid reaction, and at this time was of an apple-green colour. Specific gravity, 1003; and a stool passed at 4 a.m. was of tolerable consistence, brown colour, and fæculent odour. Reaction, alkaline.

2 P.M. Thirst much less intense; vomiting much abated; fluid still green in colour; surface warm, and of its natural colour: pulse 108: bowels have not been acted upon since 4 a.m.

10 P.M. Pulse 104, weak: skin and breath cold: complains of great weakness.

February 4th, 4 A.M. Pulse intermittent; face and hands cold; skin shrivelled and with a blueish tinge.

7 A.M. Face of a purple hue; pulse very weak and intermittent; no purging.

2 P.M. Has rallied a little: pulse 108, moderately firm.

11 P.M. Has again become cold; the surface moist, and the pulse extremely weak: the bowels were acted upon in the evening; the stools were fluid and dark-coloured.

February 5th, 10 A.M. Continues cold: face and hands of a dark hue. In the afternoon he was sinking: pulse not perceptible, and the surface covered with a cold sweat. In this state he continued until half-past nine in the evening, when he died.

Sectio Cadaveris, 18 hours after death. Slight discolouration at the posterior parts of the body: fingers and toes contracted; on section, the blood flowed slowly from the vessels, was thick and dark in colour; the textures appeared deficient in moisture. On opening the chest, the lungs collapsed moderately; the omentum was loaded with fat; the stomach and large intestines were filled with gas; the small intestines were contracted: the body was very free from disagreeable odour.

Chest. The *larynx* and *trachea* were a little congested, especially in the posterior wall. The *right lung* was engorged and dark in colour, mostly at the back part: the blood being contained chiefly in the large vessels: it floated in water. The *left lung* presented a very similar appearance to the last, with the exception of a slight puckering and consolidation at the apex: the mucous membrane of the bronchial tubes was injected, with ecchymoses, and lined with a viscid mucus streaked with blood.

The *Heart* was flabby in its substance; all its cavities collapsed. The left ventricle was healthy; the right contained a soft fibrinous coagulum: the mitral, tricuspid, and semilunar valves were healthy; the aorta was filled with dark-coloured non-coagulated blood.

Œsophagus. The mucous membrane of the pharynx and œsophagus presented a congested appearance, especially at the lower portion.

The *Stomach* was lined with a yellowish green mucus. The surface of the mucous membrane was congested; and, in some spots, a slight extravasation of blood had taken place; the rugæ were prominent. The mucous membrane of the *duodenum* was stained with bile, slightly congested, and Brunner's glands were much enlarged. In the upper part of

the jejunum, the villi were slightly enlarged, and lower down were a few white patches, which appeared like ulcers under a lens; this portion of the intestine was filled with a yellowish mucus. In the lower portions of the ileum, there were a few points of ulceration in Peyer's glands. The peritoneal surface of the small intestines was congested in certain parts; the mucous membrane of the large intestines presented, here and there, patches of congestion, but was not softened.

The *Liver*, on section, showed a little congestion in the hepatic venous system. The gall-bladder was full of bile, of a greenish brown colour, very thick consistence, but not tenacious, as sometimes occurs from the presence of a large amount of mucus: it was neutral in its reaction. Specific gravity, 1044, being much higher than the bile usually found in the human gall-bladder.

The *pancreas* and *spleen* presented no peculiarities. The *kidneys* appeared healthy; so likewise did the bladder, which contained no urine.

WEIGHT OF ORGANS.

Right Lung	17 oz.	Pancreas	4½ oz.
Left ditto	22	Spleen	3½
Heart	14	Right Kidney	6
Liver	59	Left ditto	7

The blood examined after death was taken partly from the aorta, and partly from the vena azygos. It was of thick consistence and dark in colour. Reaction, *distinctly acid*. Specific gravity, 1081·8 at 50° Fah.

Composition in 1000 parts.	Water	715·2
	Solids	284·8

Blood globules	171·4	
Fibrine	traces.	
Albumen, Extractives, fatty matters, and salts	113·4	

On incineration, 1000 parts of blood yielded—

Soluble salts	7·54	10·43 parts.
Insoluble salts	2·89	

1000 parts of blood contained 0·92 part of urea.

The *serum* obtained from the blood found in the aorta, was of a yellow colour, transparent, distinctly acid in its reaction, the acidity remaining permanent during the evaporation, and the watery solution from the dried matter exhibiting the same phenomenon. Specific gravity, 1039 at 50° Fahrenheit.

Composition in 1000 parts.	Water	863·10
	Solids	136·90

Albumen, Extractives, fat, etc.	127·84
Soluble salts	7·43
Insoluble ditto	1·63

CASE VI. The patient, a married woman, æt. 30 years, was a nurse in the Royal Free Hospital, under the care of Dr. Peacock, from whom I received the blood, and also the following short account of the symptoms. She had been suffering from diarrhœa for two days, when, on the 18th of January, she was seized, at half-past two o'clock in the morning, with vomiting, purging, and cramps; by nine o'clock the collapse was extreme, and continued for about thirteen hours, when she rallied somewhat. From this time she lay in a semi-comatose state,

and died convulsed in the morning of the 21st, at half-past two, nearly seventy-two hours after the accession of the severe symptoms. The urine was suppressed for many hours, but she passed quantities with the stools during the last period of her illness. The stools were not very copious at first; latterly, they were bilious, dark-coloured, and offensive. The post-mortem appearances were those ordinarily met with, when some hours have elapsed since the seizure, and partial restoration of the circulation has taken place.

The blood was thick and dark-coloured, and contained threads of soft fibrine floating in it; no separation of serum took place. Reaction was *very slightly acid*. Specific gravity, 1074·8.

Composition in 1000 *parts.*			
Water			740
Solids			260
Blood globules, albumen, etc.		250·64	
Soluble salts		6·02	
Insoluble ditto		3·34	

On examining for urea, this principle was found in considerable quantities; the uric acid also existed in quantities greater than in health. 1000 parts of blood yielded 0·65 part of urea.

Case vii. The last specimen of blood of which we shall speak, was obtained from a patient under the care of Dr. Miller, to whom I am indebted for the opportunity of making the examination. The patient, a man, was suffering from fever consecutive to Cholera, and the blood was taken from the loins (by cupping) fourteen hours before death. The details of the case were published by Dr. Miller in the *Lancet*, Nov. 4, 1848.

The blood had separated into clot and serum. The clot was almost as firm as usual. The serum was clear, of a yellowish tint, darker in colour than usual. Reaction, neither acid nor alkaline to test papers. 1000 grains of serum yielded 1·142 grains of urea, and 0·038 of uric acid. The specific gravity of the serum was not determined.

We will now shortly review the results, which have been arrived at by the analyses recently made, and see how far they accord with those which were given in the first part of our paper.

Physical condition of Cholera Blood. As far as this point is concerned, all recent observations agree with those formerly made, and indicate, that, from the commencement of the disease, this fluid becomes more tenacious, of a darker colour, with less disposition to coagulate, and that its specific gravity is very greatly increased. It will be found by reference to the tables, giving the results of Becquerel and Rodier's examination of the blood of men and women, that the maximum specific gravity in the male is 1062, in the female 1060. Now, in our Cholera cases, we have found the specific gravity in adult males to be, in round numbers, 1076 and 1081, and in females 1068, 1074, and 1076; also, in children under ten years of age, in whom the blood probably has a specific gravity not exceeding 1045, we have found it as high as 1076 in one case, and in the second it was doubtless even higher (for it contained more solid matter), although the small quantity of the blood did not allow it to be accurately determined. We have thus proved, that, in Cholera, this property of the blood is greatly altered.

Water and Solids. Of course, the watery portions of the blood experience a diminution; nearly corresponding to the increase of the specific gravity of the fluid, and the solids a corresponding increase. In the table above referred to, the maximum amount of solids in males was 240, and in females 227, parts in the 1000 of blood; in children it is very much less. In our Cholera cases we have found that the numbers representing the total solids were 251, 260, 271, 271, 275, 282, 284.

Blood Globules. These we have also found to be increased in quantity, in the case in which we have been enabled to separate them from the albumen; and in place of 140 parts in the 1000 (which is considered a very high healthy average), we have found them to form 166 and 171 parts.

Fibrine. In the case (Worts), where the blood coagulated pretty firmly, 2·61 parts of fibrine were obtained in the 1000 parts of blood; in Dr. Parkes' case 0·88; but I remarked that the fibrine in Worts' case, although exceeding in quantity the normal average (2·20,) was yet much less consistent than natural in character. After death, the blood of this man did not coagulate at all, and I think it is probable that in Cholera this element of the blood undergoes changes of quality, rather than of quantity, and that as long as it can be ascertained correctly, analyses do not indicate any marked deficiency; after a time, however, it can no longer be collected.

Serum. As to the specific gravity of this portion of the blood, our observations were only two in number, and these were obtained from the blood of the same patient, at different times; both of them tend to confirm the results previously found; namely, that this fluid becomes much heavier, from the large increase in the amount of its solid constituents; healthy serum being of specific gravity 1028, we found it in Cholera to be 1039 and 1041.

Albumen. This constituent of the serum was only estimated in two cases, and in these amounted to about 125 parts in the 1000 parts of serum, and to 103 parts in the 1000 of blood; so we see that it is increased in both fluids. This we might naturally expect, when we take into consideration the character of the stools in this disease; for in them, we find that, compared with some of the other ingredients of this fluid, the albumen is thrown out in very small proportions; and although the ratio between the serum and clot is diminished, yet the decrease in the water more than counterbalances the loss which the albumen sustains.

Salts of the Blood and Serum. On this point our results have far from accorded with those obtained by Dr. O'Shaughnessy, and upon which so much stress has been frequently laid; we will therefore dwell a short time to consider the facts which have been elicited. Becquerel and Rodier found that the maximum amount of soluble salts in the 1000 parts of blood was, in the male 7·4, the minimum 4·3, the mean 5·6 parts; in the female, maximum 7·0, minimum 6·0, and mean 6·8 parts. We have found in our Cholera cases, that, where the soluble salts were separately estimated, they were represented by the numbers 10·7, 7·54, 7·5, 6·15, 6·02, and 5·72 parts in the 1000 parts of blood; every number exceeding the mean, and many the maximums obtained by Becquerel and Rodier from the healthy

blood both of males and females. The analyses were performed in the same way. Again, with regard to serum in health, in Lecanu's standard we find 8·1 parts in 1000; in a specimen of healthy serum (analysed by myself for the purpose of comparison), 9·34 parts, and in Becquerel and Rodier's table, when estimated in 1000 parts of serum, from about 6 to 8 parts. In the serum of Cholera we observe 8·12 and 7·43 parts; in neither case less than the mean of numerous analyses of healthy serum; and it should be borne in mind, that when the specific gravity of the fluid is high, from the increase of the albumen, as happens in cholera, the estimation of the salts in the 1000 parts of *serum* or *blood* is scarcely correct (for we should rather find the ratio existing between the *water* and soluble salts): if this is done, then, from our experiments, the amount of salts, instead of being *decreased*, as supposed by Dr. O'Shaughnessy, will be found always *increased*. It is curious to remark the composition of the blood in Cases I and II.; the subjects were children under ten years of age, in whom the disease proved rapidly fatal. In both specimens of blood, the soluble salts were very greatly increased; in that from the younger child, they were nearly twice the amount found in health. I should have been almost inclined to doubt the accuracy of these analyses, as they were made on very small quantities of blood, but on looking into my note book, every step appears to have been correctly performed; and, to confirm their accuracy, the third analysis made on the top portion of the blood (much more fluid being used in the operation), shewed a still greater increase of these salts, due to the presence of a larger quantity of serum in a given weight of blood. It would have been extremely interesting to have known the composition of the stools passed by these children, to have seen whether or not the ratio between the water and soluble salts was increased, In Dr. Parkes' paper on Intestinal Discharges in Cholera (*London Journal of Medicine, No. II,*) it will be observed, that the stools passed by children, 10 and 11 years of age, contained in the 1000 parts a smaller amount of the salts than those discharged by adults; and it is possible that there may exist some difference in the mode of action of the poison in children and adults: a difference in the symptoms certainly does exist.

It has been noticed in the cases now referred to, as well as in those spoken of in Part I, that the blood often became neutral, in some cases even acid. Dr. O'Shaughnessy considered this as depending on the blood losing its carbonate of soda, to the presence of which its normal alkaline reaction was referred. At the present time, however, the existence of this salt, even in healthy blood, is denied by many; and certainly many of the properties of the serum, formerly ascribed to it, depend on the tribasic phosphate of soda, which, when it contains two atoms of fixed base, possesses an alkaline reaction, and has the power of holding carbonic acid in solution. That this alkaline salt is not deficient, even when the blood shews a decided acid reaction, was clearly proved by our finding that the ash from such blood or serum exhibited alkaline properties, quite as strong as that obtained from these fluids in health.

The nature of the acid which existed in such blood was not made out; but it certainly was not volatile. Though we have found no diminution of the salts in the blood of Cholera patients, yet, of necessity, the

total amount in the system must be decidedly lessened, but so also is the total bulk of the blood.

Urea. It was stated in our first part, that urea had been detected in the blood and other fluids in Cholera; but in most cases its amount was not estimated, and no relation between the quantity of this principle and the stage or intensity of the disease observed: to this point we paid some attention, and I think that the results obtained will prove interesting. In Cases II and III (Tooting children), no urea was found, and certainly it did not exist in the blood to any large extent. Still, from the small amount of blood examined, a quantity greater than in health might have escaped discovery; and that such was the case, we have some evidence in the increased amount of uric acid, which, when suspension of the urinary excretion takes place, is found in excess in the blood along with the urea, and can be more easily discovered, not being so liable to suffer decomposition; still the urea was not in large excess. In these cases, death took place during the stage of collapse. In Case III it will be also observed that no urea was found, but Dr. Parkes remarks, that it may have been present in small quantities, but certainly *not in large excess*. The blood in Case IV was not examined for this principle. In Case V, urea was sought for twice; first, when the patient was in a state of partial collapse, next, in the blood obtained from the large vessels after death; and it will be seen, that in the collapse stage (not intense) 1000 parts of blood contained 0·88 part of urea; after death (partial reaction having taken place), as much as 0·92 part was found in the same quantity of blood. In Case VI, where the blood was taken after death, the patient having had partial reaction, and then becoming semi-comatose, 0.65 part of urea was obtained from the 1000 parts of blood; and, lastly, in Case VII, where reaction had been restored, and the patient was suffering considerably from head symptoms and fever, the 1000 parts of the serum of the blood taken during life, yielded 1·14 parts of urea. So we find that the urea gradually increases in amount, from the cold stage to that of febrile reaction. The explanation of this phenomenon is, I think, exceedingly simple; for I should imagine, that in intense and sudden collapse, not only is the function of the urinary excreting organ diminished or suppressed, but also the vital metamorphoses, and therefore the formation of urea, are likewise nearly suspended. This would account for the small amount usually found in the collapse, and probably the quantity varies inversely with the intensity of this state; but when partial reaction ensues, and the vital changes take place with greater activity, should the function of the kidneys not be at the same time restored, urea must accumulate in the blood, and the amount must depend on the degree of the reaction (febrile or not), and the extent of suppression of the urinary secretion. This view is certainly supported by the results which have been as yet obtained, not only recently by ourselves, but also in the former epidemic by Dr. O'Shaughnessy and others.

CONCLUSIONS.

In comparing the recent analyses with those given in the first part of the paper, it will be seen, that as far as concerns the physical properties of the blood, the diminished amount of water, and the consequent increase of the solid portion, also the high specific gravity of the

serum, and its tendency to become less alkaline, our own conclusions perfectly agree with those previously made; and therefore, that conclusions 1, 2, and 3, before given, are thus far confirmed. With regard to (4) and (5), concerning the salts and urea, our conclusions must be—

4. That, in Cholera, the saline constituents of the blood are not only not decreased in amount, but sometimes exist even in increased proportion, and that the diminution of its alkaline reaction is not due to the loss of salts, but to the impeded excretion of organic acids, which are constantly being formed in the system.

5. That urea usually exists in increased quantities in Cholera blood, but that the amount differs considerably in the different stages of the disease; being but small in quantity in the intense stage of collapse, increasing during reaction, and in excess when consecutive febrile symptoms occur.

From what we have ascertained as to the alterations which take place in the blood in Cholera, we shall have little difficulty in solving the problem proposed in the early part of our paper—"Given a specimen of blood, to determine whether it is derived from a patient suffering from Cholera." For it will be seen, from the several conclusions we have drawn, that in this disease the blood undergoes changes, not observed in any other morbid state of the system; and should a specimen of blood be found possessing the characters described under the conclusions 1, 2, and 3, (Part I), no doubt can be entertained as to its being derived from a Cholera patient; and we can determine, to a certain extent, the stage of the disease, by examining it, with regard to the points in conclusion 5, (Part II).

There are certain points, with regard to the pathology and therapeutics of the disease, which the consideration of the results of the chemical examination of the blood and other fluids naturally suggest to the mind. In the first place, it would appear that the Cholera poison, when introduced into the blood in sufficient quantities, causes an intense exosmotic action of the mucous membrane of the alimentary canal, at the same time destroying its endosmotic power. The blood therefore being deprived of a certain amount of water and salts, by the intestinal evacuations, and, not possessing the power of regaining these by absorption from the stomach, becomes altered in the manner we have seen, and ill suited for circulation in the extreme vessels; thereby giving rise to suppression of the various excreting functions, by which in turn it is rendered impure. But a question now arises, is this condition of blood essential, and cannot the stage of collapse be induced by the direct influence of the poison? There are certain cases known by the name of "Cholera Sicca", which would seem to favour this latter view; but from what I can ascertain, no analyses of blood have been made in such, and as far as my own experience goes, the amount of intestinal evacuations in any case is by no means an indication of the extent to which the blood has become altered. This is also well shown by the condition of the blood in severe bilious diarrhœa, in which its specific gravity appears to remain unaltered, the endosmotic or absorbing power probably remaining entire. Supposing this latter property entirely suspended, it would require but little amount of intestinal evacuation to cause this condition of blood; the loss of water by the skin and lungs would alone

soon produce it; and that this power is sometimes lost will be seen in examining Case 5 (Worts), in which, although many gallons of water were taken into the stomach, the blood still continued to increase in specific gravity.

Assuming that such a condition of intestinal mucous membrane exists in Cholera, it gives us but little hopes of effecting much by remedies administered by the mouth, during the collapse; and experience has shown us, that very little confidence can be placed in them. The saline drinks, recommended by Dr. Stevens, must here fail, as even water is unable to be absorbed. This led to the method of injection of saline fluids into the veins; and certainly it appears that, even in the most intense stage of collapse, patients may, for a time, be restored by their employment. Unfortunately, however, the improvement has, in most cases, proved but temporary; but still enough has been seen, to cause many to think that their use is strongly called for. Should they be ever again employed, I think that more attention should be paid, both to the nature and quantity of the salts contained in the fluid, than has hitherto been done; and a solution should be employed whose composition resembles, as much as possible, the portion of the blood which has been lost. One would be apt to think, that the blood could not bear with impunity a considerable quantity of carbonate of soda in place of the phosphate; yet such a substitution, I believe, has generally been made. May not the use of improper fluids have been in part the cause of the truth of the remark quoted by Dr. Watson, in his Lectures on the Practice of Medicine, that, "However it might be with pigs and herrings, *salting* a patient in Cholera was not always the same thing as *curing* him."

Might not some agent be injected, which would tend to prevent the exosmotic action of the intestines? Certain bodies, possessing such a power on membranes, have been found. When reaction takes place, and the watery portion of the blood becomes restored, it would then seem rational to employ drinks containing small quantities of the salts; for it does not seem improbable, that the saline deficiency, which must then occur, unless supplied, may tend to prevent the due action of the kidneys and other excreting organs. At this time also, other remedies, as calomel, etc., should be given, with the intention of restoring the excretions.

63, Harley-street, March 31st, 1849.

OBSERVATIONS ON CREEPING BUBO,

ILLUSTRATED WITH CASES.

By SAMUEL SOLLY, Esq., F.R.S., Senior Assistant-Surgeon to St. Thomas's Hospital, etc.

THE various aspects which Syphilis presents in its primary and secondary phenomena, and the way in which those aspects are modified by the action of medicines, have given rise to the most contradictory systems of treatment. It may be safely affirmed, that there is no subject, in the whole range of surgical pathology, on which surgeons are less agreed, than on the treatment of syphilis. The true Hunterian

chancre is seldom seen presenting the same clear, bold, and decided character, which the Father of British Surgery so graphically delineated; but there are innumerable sores—the result of impure connexion—which are equally syphilitic, and which require the use of mercury to prevent all those effects, of which, if unrestrained, they are but the *avant couriers*.

The number of the cases of secondary syphilis, which are now daily met with, must, I think, be painfully obvious to every reflecting and conscientious surgeon. No one, who has extensive opportunities of observing this disease, either in private or public practice, can deny that such cases are on the increase. This increase, I believe, has arisen from the adoption of a too indiscriminate plan of *non-mercurial* treatment. Some years ago, it used to be considered a disgrace to a surgeon, if secondary symptoms made their appearance; and he was held responsible for such a result. But it appears, in the present day, that surgeons regard it as an accident which may occur to any one. Of this they are quite certain, that if they err, they err in good company. It is true that those horrible cases of syphilis, in which the bones of the head and face were destroyed by slow but undeviating steps, are not so frequent as when mercury was employed more abundantly than at present. But those dreadful ravages may be regarded as the result of the abuse of mercury, in combination with the debauched and intemperate habits of the patient, and not as the necessary effects of this invaluable mineral.

The object of this paper is not to advocate the use of mercury in all cases of decided syphilis, but to point out the advantage of using it carefully in one peculiar form, which this destructive malady occasionally assumes. I must, however, take this opportunity of saying, that I believe mercury is the only safe and certain remedy which we possess for the cure of syphilis, either in its primary or secondary stages; and when its use is once decided on, it must be employed strictly and firmly, not allowing the patient, whatever his rank or circumstances may be, to suppose, for one moment, that he is the subject of a slight disease, or of one from which he will speedily recover by a little simple treatment, which will not interfere with his general health or usual habits of life. I believe that it is the duty of the surgeon to state distinctly to his patient, that the poison, which has entered his blood, will not confine its effects to the spot where it first appeared, but will pervade the whole system, making shipwreck of his constitution, if he do not aid the surgeon, by temperance and sobriety, in every sense of the words. I am induced to speak thus strongly on the subject, because I see daily the difficulty, in which the conscientious medical practitioner is placed at the present time, from the unsettled state of professional opinion on this subject. When I find such men as Astley Cooper, Brodie, Travers, Colles, Lawrence, Copeland, Green, Bacot, and Ricord, recommending the use of mercury, I am surprised that the question of its employment should still be so unsettled. The last-named surgeon, Ricord, says (Drummond's Translation, p. 287): "The surgeon, who leaves an indurated chancre without general treatment, is, in a measure, responsible for the consecutive symptoms; and mercury is by far the most prompt and efficacious in its action. If a mercurial treatment be indicated, it ought to

be pursued till the symptoms disappear." I must not, however, dwell longer on the general treatment of syphilis, but proceed at once to that form of the disease, to which I wish to direct the attention of the profession.

Venereal Buboes have been divided by some writers into different kinds, depending principally on the constitution of the patient and his habits of life. For instance, if a man in robust health, with a plethoric constitution, accustomed to a stimulating diet, contract syphilis, and go on living in just the same way, he will most probably have a bubo in the groin, which will run its course rapidly: this may be termed *Acute Syphilitic Bubo*. In another case, where the temperament is quiet, or, rather, inclined to be sluggish, the patient's habits temperate, and a gland in the groin becomes inflamed, it is usually the consequence of a chancre, which has existed for some time, either from neglect on the part of the patient, or inefficient treatment on the part of the surgeon; this may be designated *Chronic Syphilitic Bubo*. In strumous constitutions, the glands in the groin will inflame with much less irritation, than in more robust systems. Much slighter causes, than are sufficient to produce acute bubo on the one hand, or a much shorter persistence of the poison in the system, than will excite chronic bubo in a non-strumous individual, will excite, what may be termed from this circumstance, *Scrophulous Bubo*. The surface of a bubonic abscess, like the surface of any other abscess situated in a very moveable part, will occasionally slough, if it be subjected to rough treatment; and hence the title *Sloughing Bubo*, which is only mentioned now to distinguish it from phagedænic bubo. *Phagedænic Bubo* differs materially from the sloughing bubo: *First*, in the absence of acute inflammation; *Secondly*, in the character of the constitution in which it appears—the debauched and debilitated. It occurs especially in the lowest class of prostitutes, who have been compelled to pursue their calling under the continued stimulus of gin. The sloughing bubo readily yields, in most cases, to perfect rest, purgatives, and simple local antiphlogistic measures. But not so the phagedænic bubo; when once this form of ulceration has commenced, its ravages are awful, for the depraved condition of system, which brought it into the world and feeds it, is not easily corrected. It is a gangrenous ulceration; a process in which both destructive operations appear to act simultaneously and in combination.

These classifications have been adopted by most writers on syphilis, but I do not find that any *generic* title has been given to the form of bubonic ulceration to which I now wish to direct attention, though its peculiar appearance has not escaped observation, as I shall show further on. If true *chronic syphilitic bubo* proceed to ulceration, unstayed by mercury, it assumes a most serious and intractable form, which I have designated, from its most prominent feature, *Creeping Bubo*. I believe, that by some surgeons it is designated *chronic phagedænic*, but I do not think that the term phagedænic should be applied to any ulceration, where the sloughing or gangrenous action is absent, notwithstanding the etymology of the word.

It frequently happens, that a patient presents himself with a bubonic ulcer in the groin, but without either any ulcer on the penis, or gonorrhœa. In such cases, it is of great importance to ascertain, whether such ulceration be syphilitic or not. If the history be, that he has

only had gonorrhœa, and there be no cicatrices of former sores on the penis, there is little difficulty in the diagnosis. But it more frequently occurs, that there has been a sore of some kind or another, preceding this ulceration. The ulceration following gonorrhœa, or any other simple source of irritation, generally heals kindly, and the patient remains under the practitioner who first treated him; but it is not always so with the syphilitic. I have occasionally met with cases where the original chancre has healed without mercury, leaving behind it a bubo, as truly syphilitic as the original chancre. I have also seen cases, in which the chancre has been healed under the influence of mercury, and still a bubonic ulcer has been left behind.

Ulceration in the groin, following syphilitic inflammation of an absorbent gland, is often a most intractable kind of sore. I believe that it scarcely ever heals, without the employment of mercury. If its true character be recognized, when the surface which it occupies is small, and but a short time has elapsed from the first absorption of the poison, it is easily arrested by mercury. But if it has attained any size, and the system has been for some months under the influence of the poison, then it is one of the most difficult sores to heal, in the whole range of surgery. It is then a long while before this mineral will arrest its ravages; and it is often necessary to desist from the use of mercury for some time, employing tonics, and returning to it again.

If my views regarding this treatment be correct, it is unnecessary to dwell on the importance of distinguishing its character at the onset. This disease, in its most aggravated form, when it has existed some time, unstayed by mercury, presents a very peculiar appearance, by which it is easily distinguished. Its most striking feature is the manner in which it burrows under the skin, creeping onwards from place to place. This creeping character has induced me, for some time past, to designate it in my clinical observations, as *Creeping Bubo*. It often creeps upwards on the abdominal parietes, as high as the umbilicus; down the thigh, as low as the knee; round the thigh, to the anus; and over the buttock, nearly to the spinous process of the ilium.

The formidable nature of this ulcer is best seen in those cases, where no mercury has been administered; for, in these, there is scarcely any attempt at the healing process. Some years ago, I had an opportunity of witnessing several cases of this kind occurring about the same time. Their extreme obstinacy astonished me. I saw every local application in the Pharmacopœia tried, but in vain. Mercury was not made use of, and they continued to extend, One case sank under the disease, apparently exhausted by its depressing effects.

The appearance which Creeping Bubo exhibits in its *early* stage, presents some peculiarities by which it may be distinguished. The surface of Creeping Bubo is of a yellowish colour, the discharge is thin and ichorous, the edges are inverted, overlapping, corrugated, in dotted points, white, hard, and very irregular. In its early stage it is most like the strumous or scrophulous bubo, with its overlapping edges; but it differs, inasmuch as the edges of the strumous bubo are inverted, not everted, and soft, not hard and corrugated. The distinguishing marks, however, are not so easily described by the pen as by the pencil.

I was at first much surprised, in searching the records of surgery, to

find so few clear and distinct notices of this formidable effect of the syphilitic poison. This most probably arises from the fact, that mercury was so extensively, and, as I believe, judiciously used in former days, that the poison seldom remained so long uncontrolled, as to produce the form of ulceration in question.

Swediaur[1] dwells, with his characteristic force, on those phagedænic and also scrofulous buboes, in which mercury is contra-indicated; but he does not describe any form of bubo which especially requires this medicine.

Mr. Pearson, in his Lectures on Syphilis, used to speak of this form of Bubo in the following manner:—"Instead of bubo healing after the completion of a mercurial course, it sometimes happens, that a very painful ulcer remains, which occasionally spreads to the external part of the thigh, and in a contrary direction as far as the scrotum, or even to the anus. The ulcer is ill-conditioned, and attended with bad health, often resisting every mode of treatment that can be tried."

Mr. P. has encouraged the suppuration of the part; but, though it has poured out a greater quantity of matter, it has shewn no disposition to heal. He has used the actual cautery, has applied cicuta, oxymuriate of mercury, bark, sarsaparilla, and myrrh, without any perceptible advantage; in many cases he has given internally cicuta, sarsaparilla, opium, bark, decoctum Lusitanicum, muriate of baryta, chalybeates, compound lime water, blue and white vitriol, without essential benefit to the patient. He has recommended the patient to take chiefly raisins, and decoction of guaiacum; has varied the diet in every possible way; has tried the effect of pure air, exercise, rest, and confinement, but no particular advantage has ensued. Great attention, he says, must however be paid to the general health; the sore should not be stimulated, but kept easy without being relaxed. That mode of treatment is the most efficacious, which gives the least pain. The warm sea-bath, good air and exercise, with generous diet, promises most success. The cure must be effected by the efforts of the constitution. He says, "sometimes, when a bubo is nearly healed, it becomes changed into an ill-conditioned sore, with jagged irregular edges; the ulceration begins to extend from some part of the ulcer, attended with a sensation of pruritus or tingling; and, though small at first, will spread so rapidly, as to reach almost across the body. The aspect of the sore is foul and irregular; its edges jagged and flabby, resembling a leaf that has been injured by caterpillars; when it occurs on the penis, it will sometimes extend to near the area of the pubis, entirely or partially, destroying the integuments. In these cases, the patient's ease must be consulted. Mercury will generally do considerable harm; muriate of barytes and sarsaparilla have been found most useful. The cure depends on the powers of the constitution, and the patient may ultimately do well. It is seldom very painful. Mr. P. has known the sore to run down the thigh to a great extent; he relates one case in which the disease lasted

[1] F. Swediaur, M.D. Traité complète sur les symptômes, les effets, la nature, et le traitement des Maladies Syphilitiques. 4me Ed. 1801. A Comprehensive Treatise upon the symptoms, consequences, nature, and treatment of Venereal or Syphilitic Diseases; translated from the seventh French edition of F. Swediaur. 1819.

seven years. "These sores, he says, "will frequently baffle all your attempts. Do nothing to irritate: keep them clean and easy by ointment, containing the extract of lead, calomel with lime water, decoction of guaiacum; and these will keep them dry and easy. The cure depends on some particular and inexplicable change in the constitution; and when this has taken place, the sore will generally heal in a very short time." Mr. P. used to advise his patients to take no notice of it, but to go about as usual. One gentleman, with such a sore, took a tour of the Highlands!

That admirable champion of mercury, the late Dr. Colles, of Dublin, has noticed this disease, denominating it the *Horse-Shoe Ulcer*. He says, that "mercury, in general, does not serve this symptom; yet, in some cases, very minute doses of mercury will be found most useful in disposing the ulcer to heal." He then relates a case, which forcibly supports my views of the importance of the mercurial treatment; and affords decided encouragement to those who are disposed to continue its use, even under the most discouraging circumstances. (*Colles on the Venereal Disease*, p. 104.) Colles, however, does not say that these ulcers cannot be cured without mercury. On the contrary, he says, "I have seen them yield, though slowly, to other treatment, and I have known some to have been made worse by the use of mercury." With all this I agree; but I am convinced that the cases, which are not benefited by mercury, are the exception to the rule, and are very few in number, and then only *when they have existed for a long time*. That mercury is the most powerful instrument we possess to arrest the disease, I can confidently assert, as the result of above fifteen years careful observation. I believe that the sore scarcely ever attains any great size, if mercury has been judiciously and efficaciously administered, at the *onset* of the disease.

My attention was first called to this subject by my late valued friend Mr. Tyrrell. He considered, that nothing but mercury had any control over it. His observation made a great impression on me, because he was not in the habit of using mercury extensively, and he always desisted as soon as the primary sore, for which he ordered it, was healed.

In this form of syphilis, as in many of those truly called secondary, mercury is very useful up to a certain point; beyond which it disagrees with the system, making it necessary to abstain from it for a time. But, by waiting a few weeks, or even months, we may return to its use; and its efficacy is again exhibited, in the rapid improvement of all the symptoms.

I will first relate some cases, in illustration of the extreme obstinacy of this form of ulceration, when mercury has not been steadily and judiciously administered. There are very few of our hospital syphilitic patients, who do not assert that their mouths are sore from mercury, long before they really are so. I now never trust to their words, but I examine carefully the condition of the gums. In the three following cases I was deceived into the belief, that the mercury was not arresting the disease, and was therefore useless, when it really had not been thoroughly absorbed. I therefore abandoned its use too soon. I am also convinced, that the beneficial effects of a mercurial course are very often delayed and intercepted, by giving large quantities of what in hospital

language is called support; but which really stimulates and excites, producing fever, not strength. Most of our hospital patients are men who have been addicted to the use of ardent spirits, and large quantities of porter. They are bad subjects for a mercurial course. They generally require a small proportion of their usual stimulants; but they must be given sparingly, otherwise their action will interfere with, and mask the operation of mercury, so as to render it impossible to judge correctly of its operation.

Case 1. *April* 8th, 1842. A. P., æt. 25, shopman to a grocer, consulted me, with two chancres on the penis; one on the glans, and one on the external surface of the prepuce. He says that he has had them five weeks: that they came with a pimple. He has also a bubo in the groin, the surface of which is red, and it evidently contains matter. He has been under treatment four weeks, but is not aware that he has had any mercury. The sore on the glans penis is on the side of the frænum, small; that on the prepuce is larger, with irregular edges, but without a hardened base. Infricetur unguenti hydrarg. ʒ i omni nocte. 12th. Sores not altered. A pustular eruption has appeared on the thigh, from the rubbing in. To leave off the ointment and apply lotio plumbi. ℞ Hydrarg. chlorid. gr. i, opii gr. ss, ol. carui m. i M. Ft. pilula, nocte et mane sumenda. 13th. Sores much the same; healing at one point, but not healthily. The lotion was applied by mistake to the penis. Mouth not affected. Calomel to be increased to gr. ij. in each dose. 15th. Mouth still unaffected; no indication of the effect of mercury. Sores dry but not healing. Cold water the only application. ℞ Hydrargyri chloridi gr. iij, pulv. capsici gr. i, olei carui m.i. Fiat pilula statim sumenda, et horâ somni repetenda, nisi priùs alvus soluta fuerit. 16th. Mouth tender; submaxillary glands sore. Has taken one pill; to continue calomel and opium. 19th. I opened a large suppurating bubo. 27th. Sore nearly healed: bubo granulating; presents a tolerably healthy surface. Sumat calomelanos gr. i mane, alternis diebus. *May* 5th. Sores healed; very little hardness remaining: bubo unhealthy, presents an excavated appearance. To continue the calomel as before, and to take a mixture containing iodine, gentian, and fluid extract of sarsaparilla. 7th. The bubo is so extremely unhealthy and more excavated, the skin surrounding it of so deep a purple hue, and his general health so much affected, that I ordered him to live well, and discontinue the calomel; and to add to each dose of the mixture two ounces of decoction of sarsaparilla. 13th. Bubo very indolent and unhealthy: touched with tinct. of iodine; he was ordered also to apply the ung. hydrarg. nitrico-oxydi. 24th. He has been at Gravesend for a week. The bubo is still very sluggish and unhealthy. Being now convinced that the unhealthy character of the bubo was not from debility of constitution, but from the poison of syphilis, I ordered the strong mercurial ointment to be applied. 30th. Very slight improvement. I ordered him to leave off the medicines, and to take, night and morning, a pill containing one grain of calomel and half a grain of opium. *June* 28th. Progressing very slowly. I ordered to be taken, night and morning, a pill containing two grains of blue pill, one grain of calomel, and half a grain of opium. *July* 18th. Has continued the mercury since the

last report. The mouth has been slightly affected all the time: the original ulcer of the bubo has healed, but small ulcerations have commenced at the edge of the old cicatrix. The mercury to be continued. *August* 4. To take two pills at night and one in the morning. 16th. Mouth very sore: bubo healing. 19th. Mouth very sore: omit mercury internally: continue to apply the ointment to the sore. 22nd. Mouth a little better: sore healthy. ℞ Hydr. bichloridi gr. i, decoct. sarzæ lb.ij., extracti ejusdem ʒss. F. mistura. A tenth part of this mixture to be taken thrice daily. 25. Better: continue medicines. Apply zinc ointment. *September* 7th. Not so well: sore unhealthy. ℞ Hydrargyri chloridi gr. ij, pilulæ hydrargyri gr. ij, opii gr. i. Fiat pilula, nocte et mane sumenda. Bis die sumat decocti sarzæ lb.ss., cum extracti sarzæ ʒi. 14th. Bubonic sores very unhealthy. ℞ Hydrarg. iodidi gr. ss., opii gr. i. Fiat pilula, nocte et mane sumenda. Pergat in usu sarzæ. 19th. Bubonic sores much more healthy; increase the dose of iodide of mercury to gr. i. 24th. Improving: one sore has been touched with tincture of iodine. 26th. The tincture of iodine has appeared beneficial, and is to be repeated. *October* 7th. Sores quite stationary: to leave off the iodide of mercury, and to take the following: ℞ Hyd. chlorid, gr. ij, opii gr. ss. Ft. pilula ter die sumenda. 14th. Very little progress: mouth very sore. To have a purge; to leave off the calomel, and apply the following ointment:—℞ Hydrargyri chloridi ʒi; pulveris opii ʒss; cerati cetacei ʒi. M. Fiat unguentum. 18th. Rather better; to continue the ointment, and to use a gargle of chlorinated soda. *December* 10th. The sores, which have been gradually creeping over the symphysis pubis, now nearly healed: mouth very sore. To continue the mercury. *January* 23rd, 1843. Mouth tender: has continued the mercury; but the sores are not yet healed. As the mouth is not much affected, to take the following:—℞ Calomelanos gr. iij; opii gr. ss. Ft. pilula nocte et mane sumenda. Continuetur sarza. *February* 4th. Sores nearly healed. 15th. The mercury has been continued, and has produced profuse salivation, but the sores have not improved. He is suffering much from sickness. To leave off the mercury, and to take no medicine for the present. 18th. Sores rather larger and very sore. Ter die sumat liquoris hydr. arsenicalis iodid., m. x v. *March* 2nd. Sore larger and more unhealthy. Omittatur liquor hydr. arsen. ℞ Hydrargyri chloridi gr. ij; opii gr. ss. Fiat pilula ter die sumenda. 7th. The ulcer has diminished in size; but, in consequence of his walking, the discharge has irritated the surrounding skin, and brought out a slightly pustular eruption. Mouth sore. 24th. Sore looking healthy, but not smaller. To take two instead of three pills daily. *April* 4th. Mouth very sore, profuse salivation; but not much progress in the ulcer. The yellow lotion was prescribed: and he was ordered to take half a grain of the iodide of mercury, thrice daily. 12th. Mouth rather easier: sore better. *May* 9th. Much better: sore nearly healed; mouth not tender. The dose of the iodide of mercury was increased to one grain. 16th. Better. He was ordered to take two grains of calomel, with half a grain of opium, every night, and to continue the iodide of mercury. 18th. The iodide of mercury has been omitted by mistake, and the wounds are not so well. *June* 2nd. Mercurial inunction ordered. 28th. Has continued rubbing in; and is nearly well. He thinks that the

rubbing in agrees with him better than anything else. To continue the mercurial inunction. *July* 6th. Better. 8th. Showed me an eruption on the chest and abdomen, which, he says, has alternately appeared and disappeared for six or seven months. It is simple lichen. 12th. Wounds stationary. To continue mercurial inunction every other night. One of the sores has been touched with nitrate of silver. 20th. Wounds healed. Mouth still tender. *August* 30th. He has been taking sarsaparilla, but has omitted the mercury, and has remained perfectly well since the last report.

In reviewing this case, I cannot but regret that I did not pursue the mercurial plan of treatment with greater decision and severity in the first instance; I wavered in my purpose, more than I shall ever do again. Of this I feel certain, that if I had not carried on the mercurial course as I did at last, the bubo would have still remained unhealed; and that, if I had not given it at all, it would have assumed a still more unfavourable appearance. There is another practical point which this case illustrates, viz., the superiority of the use of mercury by inunction, over its administration by the mouth. When this disease is first influenced by mercury, it is curious to observe, how it will still keep travelling on, before you can entirely arrest it. In the case just related, on the 4th April, the ulceration had cicatrized in the groin, but it continued to travel over the pubis; and before it had healed, it had reached the opposite side of the pubis. The action of the mercury was evidently interfered with, by the too early exhibition of sarsaparilla. I was also deceived by the assertion of the patient, that his mouth was sore, long before his system was really affected by mercury.

Case II. The following case is instructive, though I cannot give its termination. George Foster was admitted into St. Thomas's Hospital on the 14th *June* 1842, under my care, with chancre and bubo. The bubo was unhealthy (but not exhibiting the creeping appearance), and his general health was very much impaired. ℞ Hydrargyri chloridi gr. ij; opii ss. Fiat pilula. Carrot poultices to be applied to the bubo. The calomel was only continued a week, and quinine was given instead. He had also meat daily, with porter. After a short time, calomel was again administered.

August 11th. The same treatment was continued, but without any improvement. *November* 10th. The ulcer had extended on its circumference, and cicatrized on the interior. On the 1st of *July* 1843, he commenced mercurial inunction; on the 12th his gums became affected, and on the 16th the inunction was omitted. For fifteen months he took no medicine, but he had porter and brandy. The disease, in the mean time, kept advancing on the circumference, and cicatrizing in the centre. The local remedies were varied from time to time; that which appeared to suit it best was unguentum hydrargyri cum opio. On the 2nd of *November*, he was moved to a convalescent ward. At this time I made the following note: "In front, the disease has nearly disappeared: the lower part of the abdominal muscles, and the upper third of the thigh, is occupied by an enormous eschar, which is corrugated, like that left by a burn. At the extreme points, superiorly, and inferiorly, are ulcers about the size of a half-crown; the superior over the spinous process

of the ilium, the inferior at the lower part of the upper third of the thigh. Posteriorly, there is a large eschar; and at the superior part over the crest of the ilium, the ulceration still exists in the form of a horse-shoe, and also on the nates on both sides." I now gave him two grains of disulphate of quinine twice a-day; and on the 19th of December he left the hospital, improving, though not well. The change of air, however, benefited him very much, and he got well in about two months.

Case III. This case was also tedious, from not adopting the simple mercurial treatment. Edward White was admitted into St. Thomas's Hospital on the 24th of *January* 1843, with a sinus in the groin; he had also pains in his limbs. He was ordered to take the iodide of potassium and sarsaparilla. On the 18th of *Februavy* he commenced rubbing in mercury, but this was not continued more than a week, and he was then ordered sarsaparilla and nitric acid, with meat and porter daily. He came under my care in July, and was in the hospital a year and a half. I at first employed mercury by inunction, and gave him porter, etc. (but did not continue it very steadily), with quinine, from which he certainly derived benefit for a time. Calomel, with opium, was also given with advantage. When he left the hospital, the sore had healed at the upper part, but not at the lower. He continued under my care as an out-patient, taking the iodide of potassium for two months; at the end of which time he was quite well.

Case IV. George Leach, æt. 28, a stout hearty-looking man, a navigator, who had been working at the Dieppe and Havre Railway, was admitted into St. Thomas's Hospital on the 21st of *February* 1843, with an extensive ulceration and deep sinuses in the groin, and ulcerated sore throat. He stated that he had worked hard and drank hard; earning good wages, and wine being very cheap. He was ordered to rub in, to take decoction of sarsaparilla, to use muriatic acid gargle, and apply black wash and poultices to the groin. The mercury was soon discontinued, and sarsaparilla given instead.

He came under my care on the 5th of *July*. I immediately ordered him to rub in; this he continued for three weeks, but I was obliged to substitute calomel and opium for the inunction, in consequence of the irritation which the ointment produced on the thighs. The mouth was slightly sore for five months; the ulceration extending at the edges, but cicatrizing in the centre. During this time he had porter and brandy, with meat, daily. The mercury was now abandoned, and sarsaparilla substituted. *November* 10th 1843. From this time I varied the treatment, giving wine, iodide of iron, quinine, infusion of gentian, cascarilla, Fowler's solution, and cusparia. On the 4th *November* 1844, I resumed mercury in small doses, and the disease healed slowly, in about three months.

Case V. William North, æt. 25, was admitted, on the 23rd *Nov.* 1842, into St. Thomas's Hospital, with an extensive superficial sore in the groin, about the size of three half-crowns, and presenting all the characteristics of Creeping Bubo. He states, that he had a chancre

about two months ago, which was succeeded by others in succession, round and beneath the corona glandis. He was in Guy's Hospital for only eight days. At that time he had one chancre, and a bubo, which was opened. He never took mercury sufficiently to affect his mouth, and left the hospital with an open bubo and chancre unhealed. The chancre healed gradually; but the bubo went on extending from three different points. He had not had any venereal eruption; but he had suffered from pains in his limbs and sore throat, for which he took iodide of potassium and sarsaparilla. I ordered him immediately on his admission, ℞ Calomel anos gr. ij; opii ss.; Fiat pilula nocte et mane sumenda; black wash to be applied to the ulcer. I gave him no stimulants. His mouth soon became affected under the mercury; and the sore healed in one month from the date of his admission.

Case vi. The following case occurred in my private practice, and illustrates the value of mercury, and the importance of its steady administration; though, I have no doubt, the case would have been far less obstinate if mercury had been properly and steadily administered in the first instance. On the 5th of *February* 1846, I saw the patient, in consultation with Mr. Harris, of Fenchurch-street, suffering with an extensive Creeping Bubo in each groin. His complexion was very fair, and his appearance rather indicative of a strumous diathesis; but he stated that he has always enjoyed very good health; that his habits have always been temperate; and that he was never intoxicated in his life. *History.* On the 8th of *November* 1845—that is, eight days after intercourse—he found that he had got gonorrhœa, and some sores at the extremity of the penis, for which he took copaiba and applied the lotio plumbi. On the 19th, the sores presented such a decided syphilitic character, that his medical attendant determined to give him mercury. Omni nocte sumat, pil. hydrarg. gr. ij; to take a mixture of iodide of potassium, and to use a lotion of nitrate of silver. On the 26th, he was ordered to rub in, as the blue pill purged him. The inguinal glands had just begun to swell. On the 28th, leeches were applied to the groin. On the 29th, he was ordered to take sarsaparilla with five grains of the iodide of potassium. He only continued the rubbing in for four nights, in consequence of the irritation of the skin of the thigh. The mercury was not therefore continued more than eight days, and his mouth never made tender. On the 16th of *December*, one bubo was opened; and on the 24th, the other. During this time he had continued the sarsaparilla and iodide of potassium. The buboes were poulticed, but they gradually assumed an unhealthy sloughy appearance, for which nitric acid was applied, but without effect. About the end of December, he consulted an eminent hospital surgeon, who made some local application, and ordered him sarsaparilla, and opium at night. On the 5th of *February* I first saw him. I told him that he had a most intractable form of syphilitic disease; and that nothing but entire rest, strict temperance, and a mercurial course, carried on for at least ten or twelve weeks, would have any effect on it. I ordered him to rub in the ungientum hydrargyri fortius, and take gr. iss of quinine for a dose. This time he managed his rubbing in better, and no rash followed. I desired him to keep his bed; but he only complied with this

direction for about a week. He improved, however, very decidedly. He continued the mercury only one month, when he left town on business, and for some time pursued no regular plan of treatment. On his return to town, he used the unguentum hydrarg. nitrico-oxydi; but on leaving town, the creeping ulcerations recommenced with fresh power; and on applying for surgical advice in one of the provincial towns, he was told that he had been badly treated. He says—"The surgeon undertook my cure by the application of simple ointment, and also balsam of Peru, sulphate of copper, and nitrate of silver; together with a variety of medicines, as decoctions of bark, and rhubarb. He enjoined perfect rest; but in two months I was no better. I then applied a red ointment to the affected parts, and took mercurial pills, until the gums were made sore. I then discontinued them, and applied other forms of ointment for another month, but no benefit resulted: the ulcers, if any thing, still spreading. I then applied the chlorinated soda lotion, with much relief to myself, and a great improvement in the aspect of the sores. I then returned to London, after having kept my bed 116 days. In a short time, the ulcerative process was again set up, the chlorinated soda lotion having apparently lost its effect."

He again consulted me, saying that he had spent all his money, and that he should feel obliged if I would admit him into the hospital. He was accordingly admitted on the 23rd of *November*, 1847, and his condition is thus described by my dresser, Mr. Bull—"There is an indolent unhealthy Creeping Bubo in each groin; that in the right groin is irregular in shape and extent, with indurated, serrated, and everted edges, extending upwards from the origin of the gracilis, obliquely across the pubis (but without implicating the penis) into the inguinal region in the line of Poupart's ligament. Its width, superiorly and inferiorly, is from a quarter of an inch to three inches; and its whole length nearly six. The ulcer is deepest at the base of the penis, being there at least half an inch in depth. The ulcer in the left groin likewise extends, from the origin of the gracilis, upwards and obliquely across the pubis, into the left inguinal region, in the course of Poupart's ligament; it is about six inches in length. It is much narrower than the bubo on the opposite side. The surfaces of both are very unhealthy, discharging a sanious acid pus in small quantity. He complains of an aching pain around the sore, increased by exercise. His look is care-worn, and his health impaired by anxiety of mind." I ordered him to rub in a drachm of the strong mercurial ointment every other night, to keep his bed, and apply the lotio sodæ chlorinatæ to the buboes, so as to keep them thoroughly cleansed from discharge. 27th. The sores are cleaner and more healthy. *December* 3rd. The lotio sodæ chlorinatæ seems too strong, and irritates the sores. To be diluted. 5th. Leave off the lotion, and apply unguentum hydrargyri nitrico-oxydi to the ulcers. 10th. Surface of the sores granulating kindly; and beginning to heal. *January* 24th, 1847. Up to this time the aspect of the sores has been most favourable. The ulcers have nearly healed, but there still remains a deep sinus near the pubis, about the size of a halfpenny. He has continued to rub in every other night, since his admission, which has kept the mouth slightly affected. His diet has been principally farinaceous, with milk, and a little meat occasionally.

February 1st. The ulcer on the left side is quite healed; that on the right side does not improve. He was ordered to discontinue the ointment of nitric oxide of mercury; and to use zinc ointment instead. 12th. Complains that he cannot sleep at night. Sumat opii gr. i omni nocte. A few days after this date, he left the hospital to attend to some business matters, which I afterwards learned had been making him very anxious; and I have not seen him since. I understand, however, that he sailed for Portugal, very soon after quitting the hospital.

Case vii. The following is the next case that I had under my care; and the rapidity with which the sore healed, I believe, may be attributed to the decided employment of mercury, unadulterated with stimulants or tonics. James Haley, æt. 48, labourer, a tall spare man, was admitted on the 2nd *August*, 1848, into St. Thomas's Hospital, under Mr. Solly, with Creeping Bubo. He states that he has always had good health, and that his habits have been temperate. There is an ulcer on the outer side of the right thigh, nearly over the trochanter major. It is about the size of a crownpiece, of irregular form, with ragged everted edges. It looks sluggish, and is of a dirty yellowish colour; the discharge is unhealthy. The ulceration has evidently spread from the groin to its present position, as there is an hardened cicatrix extending from the sore across the groin, about three inches in length. *History.* He states, that about two years and a half ago, he had several small chancres on the glans penis, which were soon followed by a bubo in the right groin. He took mercury for three or four days; but not more, the sores healing with the application of black wash and copper wash. He was living very irregularly at this time. He would not consent to the bubo being opened with the lancet, but left it to ulcerate under a poultice; since which it has never healed, during a period of two years and a half. It has been creeping on to its present position, healing on one side and spreading on the other. During three or four months, he attended very irregularly to the advice of a medical man, whose treatment was confined to local applications; for six months he was his own doctor, but he still took no medicine. For one month he was in one of the large London hospitals, where he took the iodide of potassium, black wash and zinc lotion being applied to the sore, but no mercury. The sore diminished in size, but did not heal. For the last thirteen months he has not had surgical advice, but has dressed the sore with various lotions. On his admission, he was ordered to keep his bed. The edges of the sore to be destroyed with potassa fusa; and linseed meal poultices to be applied. *August* 3rd. ℞ Hydrargyri chloridi gr. ij, opii gr. ss. Fiat pilula nocte maneque sumenda. 7th. Surface looks more healthy. 14th. Improvement very gradual. The edges to be again destroyed with potassa fusa, and linseed meal poultice to be applied. 16th. The ulcer is less painful since the application of the caustic; and looks more healthy. 20th. Gums tender. Mercurial fœtor of the breath. The sore is healing. 25th. Mouth more sore. To take the pills less frequently; but to keep up the action of the mercury. Bubo healing rapidly. General health good. *September* 3rd. Sore quite healed. Mercury has been taken only one month.

CASE VIII. Andrew Lappy was admitted into St. Thomas's Hospital, on *December* 5th, 1848, with an unhealthy looking bubo, which I pointed out to the students as a Creeping Bubo in its early stage. He had chancres about four months ago; there is no hardness where these were situated. The bubo appeared a month after the chancres, so that it had existed three months. It has been open six weeks. He has lived well, and has taken no mercury. To rub in the strong mercurial ointment. 24th. Much better: the mouth has been tender one week. *January* 2nd, 1849. Bis die sumat decocti sarzæ lb. ss. To use an acid gargle. 12th. Bubo quite healed. He has employed mercurial inunction for five weeks and two days.

I am perfectly convinced, that if this bubonic ulcer had not been diagnosed as Creeping Bubo, and the patient submitted to mercurial influence, that it would have ultimately attained the size and obstinate character which has been recognized by other surgeons, but has hitherto baffled their surgical skill. It fortunately happened, that I admitted at the same time another patient, with a bubonic ulcer of nearly similar extent, and presenting something the same appearance to superficial observation. I pointed out to the students the distinctive characters of each, and told them to watch the effects of the different means of treatment, as that would test the correctness of my diagnosis. The two patients got well rapidly, the one with mercury, the other without.

My object in entering thus minutely, and it may be thought perhaps rather egotistically, into the successful diagnosis and treatment of these cases is to show, that there is some practical value in the paper. I will conclude these observations, by expressing the hope that the facts and opinions now offered may be found suggestive, if not instructive.

POSTSCRIPT *by the Editor.* MR. SOLLY *sent to us along with his MS., a series of beautiful coloured drawings illustrative of the Essay, but which could only have been published in the Journal at an expense much beyond our means, and, indeed, at an outlay exceeding the entire cost of producing this month's number. This must be a sufficient apology for the non-appearance of the plates.*

CLINICAL OBSERVATIONS.

By JOHN ROSE CORMACK, M.D. Edin., F.R.S.E., Fellow of the Royal College of Physicians of Edinburgh, and formerly one of the Physicians of the Royal Infirmary and Fever Hospitals of that City.

No. I.—CASE OF SCARLATINOUS ALBUMINOUS NEPHRITIS, IN WHICH TWO ABSCESSES WERE FOUND IN THE LEFT KIDNEY.

Purulent deposits are not often met with in the kidney; though, I believe, rather more frequently than some authors admit. On this point, Dr. Carswell, in his *Pathological Anatomy*, makes the following remarks:—"Of all the organs of the body, the kidneys are least frequently the seat of purulent deposits. The few cases which are recorded as examples of this kind, appear to have been the result of inflammation extending to the kidneys from neighbouring organs, and succeeding to the operation of lithotomy, to injuries of the spine, to the presence of calculi, and to various diseases of the pelvic viscera. We cannot, perhaps, appreciate the importance of this circumstance; but it is extremely probable, that it is to be accounted for, by the separation of the *material* cause of these depositions from the blood carried into these organs, and its excretion along with the urine."[1]

Dr. Carswell's statement requires correction. Perhaps the *non-observance*, as well as the *rare existence*, of pus in the kidney, accounts to a certain extent for the small number of published cases containing any record of such an appearance. In examining the kidneys of persons who have died of continued fever,[2] I have at least twice, and I rather think oftener, seen minute points of pus profusely disseminated over the surface of the incised kidney. In both the instances to which I refer, the appearance was visible, though not strikingly so, to the naked eye; and with the aid of a pocket-glass, of small magnifying power, it was rendered very distinct. No minute microscopic examination was made, but there can be little doubt, that in such cases, the pus is situated within the enlarged tubuli; and, very probably, it is by the breaking down of the intervening textures, and the coalescing of these minute purulent deposits, that those larger collections of pus, entitled to the name of abscesses, are formed. Rayer mentions several cases of typhoid fever, in which were found purulent infiltrations, and small abscesses in the kidney.[3] The patients suffered from cerebral symptoms; but though the urine, in one case, is said to have been acid, and in another, alkaline, no account is given as to the presence or absence of albumen. This is much to be regretted: but he narrates cases of typhoid fever, in which the urine, during life, was albuminous, and in which, on dissection, the kidneys were found to be in a state of hyperæmia, a condition which must be regarded as a stage towards a nephritic affection, which might—had the patient survived, and the train of morbid actions advanced—have ended in the formation of pus. Dr. Southwood Smith mentions a case

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[1] Carswell. Article, Pus, in his Pathological Anatomy. 4to. London: 1838.

[2] One of the cases was true, (i.e., exanthematous) typhus, in which there was active desquamation of the cuticle when the patient died. I have no record of the eruption having been seen in the other case. In neither, I regret to say, was the urine examined.

[3] Rayer. Maladies des Reins, t. ii, p. 22, et seq. 8vo. Paris: 1841.

of a man, aged 28, who died on the fourteenth day of typhus fever, in whom the right kidney was externally nodulated, and internally healthy: the left appeared healthy externally, but when cut into, was found to contain several abscesses. In this patient there were likewise effusion within the cerebral membranes, and a tubercular state of the lungs; ulceration of the mucous membrane of the ileum and cœcum; also enlargement and induration of the liver.[1] Rayer[2] also details a case of double pneumonia, in which, at the summit of the right kidney, there was a yellow spot, which, when cut into, was found to be a small collection of bloody pus (*un petit foyer purulent et sanguinolent*). There was extensive granular alteration of both kidneys. The same author also mentions a case of cancer of the stomach, in which the patient had complained of pain, on pressure, over the loins, and in whose kidneys, on dissection, some specks of pus (*quelques grains de pus*) were detected.

Gendrin, in his *Anatomical History of Inflammations*, states, that he has met with four cases of purulent deposits in the kidney after small-pox: and the appearance seen in one of the cases (which occurred in the Hôpital des Enfants Malades of Paris) is thus described by him. "The cortical substance of the kidneys was softened, and of a deep reddish grey colour: the tubular structure could only be recognized from its being somewhat redder, of greater density, and less friability than the true glandular portion of the organ. There were as many small abscesses as cones: these abscesses were of irregular forms, about the size of lentils, and the surface of their cavities was rough, greyish, and studded with numerous brownish red points. Purulent infiltration around the abscesses was observed throughout the whole thickness of the inferior half of the right kidney: in the left, there was purulent infiltration, but no abscesses. There was no pus in the urinary passages.[3]"

Dr. Thomas Watson details a case of what appears to have been acute nephritis, arising without any ascertained cause, and terminating in suppuration. An abscess in the right kidney pointed externally. "The pelvis of the kidney was much dilated; and the substance of the gland destroyed, to a considerable extent, by suppuration and ulceration. The ureter, where it left the kidney, was found to be impervious."[4] "Acute suppurative nephritis," says Dr. George Johnson, "is not a common disease, but it is a very serious and a very fatal one. In one case it supervened upon chronic disease of the kidney, in consequence of the intemperate use of fermented liquors, by a man whose general health was much disordered, and who had been subject, for several months, to successive crops of boils and carbuncles about the neck and shoulders. He died in about a week after symptoms of suppurative nephritis had manifested themselves. The nature of the disease was detected at the very commencement, by a microscopical examination of the urine. Both kidneys were much enlarged, evidently from a recent attack of acute inflammation; numerous small points of suppuration were scattered through them, and the left contained two large recent abscesses."[5]

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[1] Smith (Dr. Southwood), p. 306. [2] Op. cit. p. 298.
[3] Gendrin. Histoire Anat des Inflam. t. ii. p. 256, as quoted by Rayer, in op. cit.
[4] Watson (Thomas, M.D.), Practice of Physic, vol. ii. p. 538. London: 1843.
[5] Johnson (George, M.D.), Article Ren, Cyclop. of Anatomy and Physiology, vol. iv. p. 257. London: 1848.

Dr. Craigie mentions several cases of renal abscesses, occurring chiefly in strumous subjects.[1] Dr. W. T. Gairdner describes a case of a woman, æt. 27, who died with a peritonitis, sloughing abscess of the spleen, and purulent deposits in the kidney and lung. "The kidneys were of the natural size; one of them contained, in the cortical substance, numerous small abscesses from the size of a pin's head to that of a pea; several of these occurred in groups towards the surface of the kidney. The abscesses were not surrounded by any indurated substance, but by a vascular rim of a rose colour, and about half a line in diameter. They contained a bright yellow pus. A little pus was also, in one or two places, infiltrated into the tubular cones, near their base. The pelvis of the kidney was highly vascular, but contained no fluid."[2] It may be here observed, that the tubuli (as stated by Dr. W. T. Gairdner) are sometimes blocked up by a white opaque deposit, possessing none of the physical characters of pus. In one very interesting case of this kind, which he details at length, "the right kidney was broken up superiorly into several anfractuous cavities, from the size of a hazel nut to that of a walnut; these cavities were filled with a diffluent white substance, which had much of the appearance of softened brain. The cavities were lined by a false membrane which contained numerous gritty particles," and which appeared to be "composed of the condensed tissue of the gland." The microscope disclosed these white deposits to be "composed of molecules and granules, interspersed with free nuclei, the debris of the epithelium cells."[3]

Professor J. Y. Simpson mentions a case of cystous and granular disease of the kidney, which proved fatal from puerperal convulsions. "The right kidney was converted into numerous cysts, of about the size of a walnut, containing unhealthy pus, which passed along the ureter, and filled the bladder. The left kidney exhibited an advanced stage of Bright's disease." He mentions two other cases in which "purulent-like matter" was found in the kidneys of patients dying from puerperal convulsions.[4]

Without entering into any farther details, it may be stated, in qualification of the opinion of Dr. Carswell above quoted, that pus is occasionally, perhaps not very unfrequently, to be found in the kidney in fatal cases of small-pox, measles, typhoid fever, pneumonia, and other diseases distinct from inflammation extending to the kidneys from neighbouring organs, or succeeding to the operation of lithotomy, to injuries of the spine, to the presence of calculi, or diseases of the pelvic viscera. If this statement be correct,—and within certain limits it is incontrovertible,—how does it happen, that although the kidneys have been long and carefully studied in connexion with scarlet fever, that not one of the published necropsies of such cases, so far as I know, contain any record of pus being found in these organs?

It is beyond all doubt, that in a large number, if not in most cases of Scarlatina, there is—during the eruptive fever occasionally, but more

[1] Craigie (David, M.D.), Practice of Physic, vol. ii, p. 510. Edinburgh: 1848.
[2] Gairdner (Dr. Wm. T.), Pathology of Kidney, p. 29. Edinburgh: 1848.
[3] Op. cit., p. 15.
[4] Simpson (James Y., M.D.), Proceedings of the Obstetric Soc. of Edinburgh: in Monthly Journal of Med. Science, Sept. 1847, p. 212.

often during desquamation—bloody urine, scanty urine, or suppression of urine; and that in these cases the urine is albuminous, and the patients affected with dropsy, and often with alarming coma or convulsions. When such cases terminate abruptly in death, we commonly find simply hyperæmia of the kidneys, and a choking up of the tubes with epithelium; but if they prove fatal after a more prolonged period, that condition is found which is described as characteristic of advanced nephritis, and which has been so elaborately described by Rayer and other authors in connexion with Scarlatina and albuminous urine. That this affection of the kidney should be so common is not at all surprising, when we remember the frequency of acute desquamative nephritis in connexion with Scarlatina, and look through the microscope at the urine passed by the patients, and find it loaded with epithelium, and even with complete casts of the tubes, indicating the activity of the desquamation from the internal coat of the tubuli uriniferi. When this desquamation is excessive, it is easy to see how these small passages must become choked up with epithelium—and congestion, causing suppression ~~and~~ of urine, and ultimately dangerous inflammation—be induced: but it still remains to be explained how it is that such changes should so rarely terminate in suppuration.[1] Rayer, in the second volume of his *Traité des Maladies des Reins*, p. 428, discusses very fully the subject of albuminous nephritis succeeding Scarlatina, and gives most copious references to all the recent writers on the subject; yet in no part of his elaborate chapter does he mention pus having been found in the urine during life, or in the kidneys after death, in Scarlatinous renal disease; and in volume third, in his article on "Pyelitis," no reference is made to that disease occurring in conjunction with, or as a sequence to, Scarlatina. I have made pretty extensive inquiries among many friends well acquainted with pathological anatomy, and from all of them have received the same answer, that they had neither seen nor read of Scarlatinous renal nephritis terminating in abscess; nor has any one, except Dr. Bevill Peacock, informed me of having seen pus in the kidneys after Scarlatina. That gentleman, however, states that he has seen diffuse suppuration of the kidney. In a note with which he favoured me, of date 23rd of January, 1849, in reply to my inquiries, he says, "I do not know of any published cases of abscess of the kidney—true abscess, I mean—connected with Scarlatina. I have never seen anything of the kind, though I have found diffuse suppuration in such cases."

Case of H. L. D., aged 7 years and 10 months. The following is the history of the case referred to, which lately occurred in my practice. It will be observed, that the patient died on the fiftieth day from his seizure with Scarlatina; but that he was under my charge only during the latter thirteen days of that period. On one occasion, before I saw him, the urine had been entirely suppressed for seventy hours; and during the whole of my attendance it was of extremely low specific gravity, and

[1] Dr. George Johnson was the first to use the now generally adopted terms "chronic, and acute desquamative nephritis." Vide his admirable essay on Inflammatory Diseases of the Kidney, in the Med. Chir. Transactions, vol. xxx, p. 165. London: 1847. He pointed out that "the desquamation from the inner surface of the tubes is analogous to that which occurs on the skin subsequent to the eruption of Scarlet Fever."

intensely albuminous—on some days, fully two thirds of its bulk being solidifiable by heat and nitric acid.

On the 24th December, 1848, I was requested to visit this patient, who, I was informed, had been under the care of able physicians. Every particular of the case was laid before me with great precision, on this and subsequent occasions, so that I am enabled to give a complete history of his illness. On the 24th December, when I first saw the boy, he may be considered as in the thirty-eighth day of the attack, reckoning from the first day on which he complained; at which time the throat was affected.

First Day. (17th Nov. 1848.) A slight sore throat was complained of.

Second Day. (18th Nov.) A slight appearance of Scarlatinous eruption was observed. He kept his bed: had two grains of calomel; and also saline draughts and powders every four hours, containing a little antimonial powder and nitrate of potash.

Third Day. (19th Nov.) The patient seemed to be convalescent: there was very slight sore throat; and no eruption was visible. No medicine was described.

Fourth Day. (20th Nov.) There was scarcely any sore throat or ailment of any kind.

Fifth Day. (21st Nov.) There was slightly increased sore throat; but not such as to cause any anxiety in the mind of the medical attendant.

Sixth Day. (22nd Nov.) He was decidedly worse this morning and continued very feverish during the whole day. The treatment followed on the 18th Nov. (*second day*) was resumed.

Seventh Day. (23rd Nov.) There was increased fever; and great drowsiness. Calomel, and the warm bath were ordered,

Eighth Day. (24th Nov.) Drowsiness ceased, and was succeeded by confusion of ideas and delirious talking. When roused, he always knew those around him; and answered questions rationally.

Tenth Day. (26th Nov.) The delirious condition continued during yesterday and to-day. The pulse was very rapid and faltering: the glands of the neck were now greatly swollen: the neck was rigid, and the head was thrown back. The medical opinion as to the possibility of recovery was on this day very guarded. Four leeches were applied to the swollen part on the left side of the throat, and calomel and antimony prescribed. The leeches bled freely.

Eleventh to Fourteenth Day. (27th to 30th Nov.) After the application of the leeches, the more urgent symptoms abated. On the night of the 26th, a considerable ichorous discharge commenced from the nostrils, and continued for a number of days. Between the 27th and 30th, the delirium gradually ceased; and the patient began to enjoy quiet rest. The swelling of the glands subsided; the pulse, however, continued high; and (with the exception of a slight moisture in the flexures of the joints, on the 28th or 29th,) the skin was hot, dry, and harsh (which it continued to be, with very little change, up to the last.) At this time, carbonate of ammonia was prescribed; and a certain quantity of beef tea was ordered to be administered to the patient, even though he should not indicate a desire for food.

Fifteenth Day. (1st Dec.) When seen by his medical attendant in the morning, his state was reported to the family to be improved; but,

in the afternoon, the nurse became alarmed by a return of the delirium. The alvine and renal secretions seemed to be almost suppressed, and pain with a sense of oppression were complained of at the scrobiculus cordis. Three grains of calomel, with three of antimonial powder were given.

Sixteenth Day. (2nd Dec.) The secretions were improved, and the delirium had subsided.

Seventeenth to Twenty-third Day inclusive. (3rd Dec. to the 9th Dec.) During this period, convalescence appeared to be proceeding; and, on the 5th Dec. he was said to be out of danger. During the whole of this period, however, symptoms, causing much anxiety, existed; *e.g.* dry, harsh skin, and a pulse never under 120. At this time, he had a bad state of throat, with ulcers, and difficulty in swallowing; but these annoyances gradually ceased. At this time also, he complained of some pain in the region of the stomach, he took the chicken broth, which was ordered, with loathing, and always insisted on having a basin ready, as he expected to be sick. The motions were never deficient in bile; and sometimes seemed to consist chiefly of that secretion. From the 3rd to the 6th December, the urine was of a dark colour, and moderate in quantity. When passed, it was clear; and, on standing, neither became cloudy, nor yielded any precipitate. About the 7th, 8th, or 9th (during which time he was taking acetate of quinia,) it underwent a decided change; it became much diminished in quantity, and, on standing, exhibited a thick light drab-coloured cloudiness. When tested with heat, no albumen was discovered.

Twenty-fourth Day. (10th Dec.) To-day the acetate of quinia was discontinued. The urine had been diminishing in quantity, and now the kidneys entirely ceased to act. There was not one drop of urine passed from the afternoon of Sunday the 10th, to the afternoon of Wednesday the 13th, being a period of seventy hours. During this period, the patient had a strong urinous smell.

Twenty-fifth Day. (11th Dec.) No change of symptoms or treatment.

Twenty-sixth Day. (12th Dec.) A mixture containing chlorate of potash was prescribed. The skin was still hot and dry, and the pulse continued, as formerly, at about 120. He was placed in a warm-bath, after which there was a decided perspiration, an occurrence which never took place during the course of his illness, except on this single occasion. A blister to the loins was talked of, and sweet spirits of nitre prescribed, as an addendum to the chlorate of potash mixture. Wine was also given.

Twenty-ninth Day. (15th Dec.) The sweet spirits of nitre were not persisted in, the wine was discontinued, and the kidneys acted better. Asses' milk was now given in small quantity, and beef-tea; but toast-and-water, of which he had abundance, was the only thing he liked. On this day, the state of the patient seemed more favourable; the pulse fell to 96; (but it never was so low again.) He had no tendency to vomit, or nausea after taking food, which he had had for several days previously.

Thirtieth day. (16th Dec.) Some wine was given during this day, after which the pulse rose to 120.

Thirty-first and *thirty-second days.* (17th and 18th Dec.) Stimulants were withdrawn during these two days, and the patient was ordered to have soda-water, with either asses'-milk, sherry, or lemon-juice, and to

be allowed to drink largely of cold water. Small doses of grey powder were given at intervals of eight hours. Two table-spoonfuls of blood were lost from the sores caused by the leech-bites. During these two days, the urine came in much larger quantities; and the general aspect of the patient seemed a shade better.

Thirty-third day. (19th Dec.) Drs. Willis, Gregory, and Paris held a consultation. There was some albumen in the urine, as there had been since the return of the secretion. The diet was directed by the physicians to consist of chicken-broth and white wine whey; and, as medicine, they ordered a preparation of cinchona.

Thirty-sixth day. (22nd Dec.) The last-named treatment was steadily pursued, up to the evening of this day: at first, there was an apparent improvement in the appetite. This evening, he began to retch, and brought up some unaltered blood, in small quantities. In the middle of the night, the patient vomited a good deal of black grumous blood. The pulse was 150, and not without power. In these circumstances four drops of Battley's sedative solution were administered; the bark and white wine whey were discontinued; and the soda-water and milk, which the patient always liked, were directed to be resumed.

Thirty-seventh day. (23rd Dec.) The females in immediate attendance upon the patient, thought him better; and the pulse had fallen to 120. During the day, he asked for some toast; and was supported in bed, and held the knife in one hand, and the toast in the other, cut off a piece of butter for himself, and though very weakly, contrived to spread it on the bread, and ate a small piece when prepared.

Thirty-eighth day. (24th Dec.) This was the day on which I first saw the patient. At this time, the family entertained little prospect of his recovery, and I saw nothing to justify my inspiring them with better hopes. I did not suggest any alteration in the treatment, as none seemed called for; and it was arranged that I should meet Dr. George Gregory in consultation on the following day, as he had already seen the patient several times.

Thirty-ninth day. (25th Dec.) The following treatment was agreed to by Dr. Gregory and myself. Three grains of grey powder to be taken immediately; and a teaspoonful of the following mixture three times a-day: ℞ Potass. nitrat. gr. xxiv, tinct. digitalis m. xxiv, sacchari ʒi, tinct. aurantii ʒi, aquæ, ad ʒiss. M. A warm fomentation of marsh-mallows to be used to the legs.

Fortieth day. (26th Dec.) 10 a.m. He had less tympanitis and œdema of the instep than yesterday; and there was less fever. Had three motions since taking the powder; the bowels had not previously acted since Friday, the 22nd. He complained of great thirst, and of much pain in the right arm; also of muscular and articular pains in the left arm. The urine was not deficient in quantity; specific gravity, 1012; highly albuminous.

6 P.M. Had passed four stools, with pain and tenesmus, since the morning. He was ordered to take half the following mixture directly, and the rest, if the bowels were moved, during the night. ℞ Tinct. card. co. m. xxx, opii m. iij, ol. anisi m. i, mist. cretæ ad ʒvj. M.

10 P.M. Both doses have been taken, and he has had two more stools. There was considerable increase in the tympanitic distension; but he was

more comfortable and freer from pain, than at six o'clock. In other respects, the symptoms are the same. ℞ Tinct. opii m. v, mist. cretæ ad ʒij, ol. anisi m. i. M. A teaspoonful after each stool.

Forty-first day. (27th Dec.) Had a restless night, slept very little. The abdominal distension remained stationary, but the œdema of the instep and ankle were very considerably increased. The urine still continued as albuminous as formerly; and under the microscope exhibited in abundance globules like those of pus, casts of tubes, and crystals of uric acid. To discontinue all medicine.

Forty-second day. (28th Dec.) Much delirium at intervals; great increase of the abdominal distension, pushing up the diaphragm, and causing projection of the ribs. There was also, at times, stupor; but he answered questions occasionally. Since the morning of yesterday, he had had four small motions, of the colour and consistence of gruel. When I left him, at 4 a. m. of this day, the distension of the abdomen, the œdema of the feet, and delirium, seemed to be increasing rapidly from hour to hour; and all the indications were those of speedy death. On returning at

9 A.M., there was no increase of the distension or œdema, and a remission, if not a complete cessation, of the delirium. It is worthy of note, that before the delirium came on, he had been taking some white wine whey. Secretion of urine much diminished; the characters continue the same as formerly.

11 P.M. He was not worse; and had passed two or three small bilious and fæculent evacuations.

Forty-third day. (29th Dec.) 7 p. m. Since the last report, he had passed some small bilious and fæculent evacuations, and the quantity of urine was considerably augmented.

Forty-fourth day. (30th Dec.) The amount of distension of the abdomen, and of œdema of the legs, had greatly abated, and was not more than when Dr. Gregory saw him on the 25th. Had the yolks of two eggs. Shortly after taking the second, he had some nausea, with distressing efforts at vomiting, while I was present; and he took, with good effect, 30 drops of brandy mixed with about ʒiss of water. With this exception, he had had nothing which could be called medicinal, since the 27th. During this day he suffered greatly from muscular and articular pains in the upper and lower limbs, when they were moved.

Forty-fifth day. (31st Dec.) Urine increasing in quantity; specific gravity, 1011. A copious precipitate was produced by heat, which was sparingly soluble in nitric acid. Scarcely any tube-casts were seen; and the number of organic corpuscles were greatly diminished.

Forty-seventh day. (2nd January 1849.) He was visited to day by Dr. Gregory, in consultation. As compared with his state at the last report, there was an observable amendment; but the progress had been so extremely gradual and steady, that no appreciable change could be detected from visit to visit. Petechiæ were observed on the arms and legs. At 9 P.M. he had the following draught, in consequence of the stools being frequent and relaxed: ℞ Trisnitrat. bismuth. gr. iij, tinct. opii m. iv, aquæ ad ʒvj. M. This was the only medicine which he had had, since the chalk mixture on the 26th, excepting the brandy before mentioned. Before taking it, he had a refreshing sleep of three hours' duration. Urine of specific gravity 1012; deposited a copious dirty

white sediment, containing mucous-looking globules, and some granular matter; the latter was but slightly affected on the addition of hydrochloric acid, but some crystals of uric acid were formed. The quantity of albumen, as shewn by heat and nitric acid, appeared to be diminishing daily.

Forty-eighth day. (3rd Jan.) Has had a good deal of refreshing sleep. Pulse 134; it had not been so low since I first saw him, on the 24th Dec. The petechiæ had not increased in number. State of abdomen, natural; less œdema; countenance improved. Had passed three ounces of urine since nine last night. Specific gravity of urine, 1015; clearer than before, and very much less albuminous; contained fewer globules. No casts of tubes had been observed for two or three days.

Forty-ninth day. (4th Jan.) Had a good deal of delirium and stupor. Specific gravity of urine, 1011; almost devoid of albumen.

Fiftieth day. (5th Jan.) Died this evening, having been shortly before death conscious of what was going on around him, and swallowing nourishment up to the last. He sunk exhausted: the pulse becoming feeble and fluttering, and the respirations hurried.

Sectio Cadaveris, made thirty-seven hours after death, on the 7th January 1849, 9 A.M. to 1 P.M., by myself, assisted by Dr. Alexander Henry. The weather was frosty.

External Appearance. There was no cadaveric expression of the countenance, which was more like life than it had been for a day before death. The body was perfectly flaccid, apparently quite fresh, and exhaled scarcely any odour. It was very greatly emaciated. There was œdema of the hands (especially of the palms), and of the instep. On both arms, the petechiæ, which were noticed some days ago, were observed to be more marked, and likewise of a more florid aspect than during life. They were also sparsely scattered over the legs, but did not extend above the knees.

Head. On removing the calvarium, the arachnoid membrane was observed to be distended with serous fluid; and through the membrane, chiefly between the convolutions, were seen numerous white consistent flakes. The vessels at the base of the brain were not distended; there was a considerable quantity of fluid effused in this situation, external to the arachnoid. The substance of the encephalon was remarkably firm. On slicing the brain from above downwards, the white and grey matter appeared well marked; and the usual number of red spots were seen. On gently pressing the mass, drops of red fluid blood appeared immediately at each. The right lateral ventricle was very much distended, and contained several drachms of clear fluid, which, on being heated, and tested by nitric acid, was found to contain a good deal of albumen. The choroid plexus was bulky, and appeared œdematous, and was not distended with coloured blood. The foramen of Monro was sufficiently large to admit of a crow-quill. The left ventricle was also distended with fluid, and enlarged, but to a much less extent than the right.

Chest. On opening the chest, the lungs did not collapse. There were between eight and nine ounces of fluid in the pleural cavities; the right containing the larger proportion. The lungs, anteriorly, were pale, and had no appearance of emphysema, but were very œdematous. They crackled when pressed, emitting a frothy serum-like fluid at the

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margins of the incisions which had been made in them. Posteriorly, the lungs had a purple appearance, most probably depending on gravitation during life, and on cadaveric congestion; they were here also very œdematous, especially at their margins. The *heart* contained a very small black clot in the right ventricle, and about two ounces of fluid blood in the right auricle. In both ventricles were shreds of dense fibrinous coagula. The substance of the heart was firm, but very pallid; it was entirely destitute of fat. The endocardial surface was perfectly smooth, and the valves quite healthy. The pericardium contained some ounces of serous fluid, the exact quantity of which was not determined. The aorta yielded fluid blood.

Abdomen. The stomach was intensely congested at the œsophageal end; and in this situation, there was a place where the mucous membrane was softened. The rest of the alimentary canal presented nothing remarkable. The *liver* was gorged with blood; but apparently quite natural in other respects. The *gall-bladder* contained bile, of the natural appearance and fluidity. The *pancreas* and *spleen* were firm, and apparently healthy. The *kidneys* adhered loosely to their capsules, and seemed atrophied. They had a mottled appearance, such as is represented in Fig. 1, of a plate accompanying Dr. Willis's interesting paper on the "Dropsy following Scarlet Fever," published in the *Edinburgh Monthly Journal* for 1841, p. 697. On bisecting the left kidney in the mesial line, it presented the well known appearance characteristic of "albuminous nephritis," *i. e.* the cortical substance was pale, anæmic, shrunken, and horny, and the pyramids (as contrasted with the surrounding tissue) looked red and turgid. This kidney contained a well-defined, circumscribed cavity at the lower part, which would admit of a large hazel nut; there was also a smaller cavity, of the size of a small pea, communicating with the other. Both cavities were chiefly filled by dirtyish-white matter, somewhat resembling cerebral matter in a state of softening. Along with this, in the passage between the cavities, and in the pelvis of the kidney at the point where it communicated with the larger cavity, there was some fluid pus—perhaps in all about a scruple by measure. That it really was pus could not be doubted, both from it appearance to the naked eye, and from the characteristic pus globules being well seen under the microscope. Upon examining the dirty-white matter, it was seen, along with some pus-globules, to contain much epithelial debris; and upon comparing it with Dr. Gairdner's case, already referred to at p. 453, we became quite satisfied that what he has so well described was what we saw. The right kidney, externally, had a somewhat nodulated aspect, being deeply indented at the sulci. When bisected, it presented almost exactly the same appearance as the left, excepting that there were no cavities and no pus.[1] The *bladder* was moderately distended with urine. Subjoined are the

WEIGHTS OF THE DIFFERENT ORGANS.

Cerebrum	21oz 13drs.	Liver	12oz. 0drs
Cerebellum	2 : 8	Pancreas	0 : 10
Pons Varolii and Medulla Obl.	0 : 6	Spleen	1 : 2
Lungs	7 : 4	Left Kidney	1 : 10
Heart	2 : 8	Right ditto	1 : 4

[1] The preparation, and a coloured drawing of the left kidney, were exhibited by me at the Westminster Medical Society on the 14th April.

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Remarks on the Case. The case of H. L. D. possesses many points of interest. The whole train of symptoms, the coincidence of Scarlatina with albuminous urine and dropsy, as well as the appearances found on dissection, clearly indicate that the morbid changes were similar to those commonly described by authors under the term Scarlatinous Albuminous Nephritis. Convalescence seemed to be likely to commence at the end of the eruptive fever, when a new fever set in, in connexion with excessive desquamation from the internal surface of the tubuli uriniferi. The epithelium was formed and separated too rapidly, to admit of its being washed out by the urine; the tubes, therefore, became choked up, and the organ, probably already somewhat engorged with blood, was rendered still more so by this obstruction, and a state of extreme hyperæmia was the result. This was proclaimed by the urine becoming albuminous, and the secretion being suppressed from the 10th to the 13th December—a period of seventy hours. The skin and mucous membrane of the lungs acted for the kidneys to some extent, as was indicated by the urinous breath and odour exhaled by the patient; who at this crisis would certainly have died comatose, and probably convulsed, had not Nature found vicarious outlets for the urea, and other poisons circulating in the blood.

It is not necessary to suppose, that at this stage, any irremediable structural change had taken place, such as that found on dissection, viz., obliteration of the veins and tubuli; because we know, that mere *congestion of the kidney from any cause* may bring on albuminuria, or even suppression of urine, with the cerebral symptoms which are excited by non-elimination of urea and other excrementitious products from the blood. These phenomena may exist as the result of renal congestion caused by certain morbid poisons, as in congestive fevers and the cold stage of ague and cholera; or as the consequence of the irritation of renal cancer or calculus; or from mechanical obstruction to the free return of blood from the kidney, as in the albuminous urine, associated with cerebral disorders of various kinds and degrees, seen in some women from pressure of the gravid uterus; and in many patients suffering from ovarian, aneurismal, and other abdominal tumours. Any tumour pressing directly or indirectly on the emulgent vein must, I believe, certainly induce albuminuria; for the experiments on rabbits of Dr. G. Robinson show that the ligature of that vessel produces this effect.[1] These considerations are of extreme practical value, because they show the importance of daily examining the urine for albumen in the course of Scarlet fever, as well as during and after this and other diseases, in which cerebral seizures, and suppressed or diminished secretion of urine are to be dreaded; so that no time be lost, on the discovery of albumen, in endeavouring to relieve the kidney from its hyperæmic condition, by alvine derivative treatment, hot fomentations, large bran poultices, or, when the symptoms are urgent, cupping over the loins.

But to return to the case under consideration. The cortical substance, so pallid and devoid of blood-vessels on dissection, was greatly altered by long-continued disease. Congestion had, long before death, passed into active inflammation. There had been inflammatory gran-

[1] Robinson (George, M.D.) On Granular Disease of the Kidney; and its mode of action in producing Albuminous Urine. London: 1842. Dr. Robinson argues ably, and, to my mind, conclusively, in favour of "granular degeneration" being "nephritis."

lar exudation into, and around, the tubes, excited by the pressure of the gorged veins; the veins also had became inflamed; and both had subsequently become atrophied, by the contraction of the cacoplastic lymph which had been effused. The albuminous condition of the urine, and other symptoms originally caused by mere congestion, were kept up by this state passing into inflammation, and thus rendering permanent that which was at first, as regarded the veins, mere obstruction from congestion with blood, and as regarded the tubuli, obstruction from pressure on their walls by the enlarged veins, and internal choking with epithelium. In granular disease of the kidney, that treatment which relieves renal congestion palliates the symptoms and diminishes the amount of albuminuria; and the sudden but brief amendment, with diminished albuminuria, which occurred in the case of my patient on the 30th December, must be ascribed to the bursting of the abscess having relieved the surrounding congestion, previously excited and kept up by its pressure.

It is to be regretted, that albuminous urine is still so much spoken of as specially diagnostic of renal *disease*, as it leads to errors in practice. The opinion of Dr. C. J. B. Williams is undoubtedly correct,—that, *per se*, albuminuria indicates nothing more than *congested* kidney.[1] The facts already stated establish the correctness of this view.

In the treatment of patients emerging from Scarlet Fever, and even of those in an advanced stage of convalescence, or apparently quite recovered, it is most important to remember, that, from remaining debility, or, more generally, from this cause in conjunction with obstruction of the tubes from excessive desquamation, slight chills are apt to cause hyperæmia of the kidneys, which, when neglected, may originate a formidable, and even fatal, train of symptoms. Diuretics are seldom safe in such cases: though sometimes spiritus ætheris nitrici may be given. Besides the remedial means already referred to, it is important to order as adjuvants, (or as prophylactics), the clothing of the entire body in flannel, the use of mild but nutritious diet, and the scrupulous avoidance of exposure to chills, to wet, or to currents of cold air,—not only until desquamation from the skin and tubuli uriniferi have ceased, but till the patient has regained his wonted tone. Scrofulous children recovering from Scarlatina, require special watching; for even when they have had the disease so mildly as to be scarcely perceived, they seldom escape without dropsy of more or less intensity. There is a great proneness to renal congestion in scrofulous children, even when little out of their usual degree of health; this is evidenced by the frequency of albuminuria in them. I have repeatedly found the urine albuminous in the febrile attacks of strumous children; and in a case of tabes mesenterica, with dropsy, which I lately cured (by steady mild purging, cod-liver oil, and syrup of the iodide of iron), the urine at the commencement of the treatment was intensely coagulable by heat and nitric acid. In the diseases of children of scrofulous taint, (especially when the skin is harsh and scaly), the urine ought always to be tested for albumen; and, in a large number of cases, it will be found to contain it, but will often cease to do so, on the exhibition of a smart purgative. Dangerous cerebral diseases may thus be very often averted.

Essex House, Putney, April 1849.

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[1] Williams (Charles J. B.) Principles of Medicine, p. 193. London: 1848.

BIBLIOGRAPHICAL RECORD.

PARTURITION AND THE PRINCIPLES AND PRACTICE OF OBSTETRICS. By W. TYLER SMITH, M.D., Lond. Lecturer on Obstetrics in the Hunterian School of Medicine. pp. 395. London: 1849.

WE can imagine the pleasure with which WILLIAM HUNTER or DENMAN would have welcomed the present work; certainly the most valuable contribution to Obstetrics that has been made since their own day. For ourselves, we consider its appearance as the dawn of a new Era in this department of medicine.

The First Lecture treats of the peculiar stamp given to British Obstetric practice by the combined influence of race, religion, civilization, and social habits; it contains a comparative estimate of the relative values attached to the life of the mother and fœtus, during gestation and parturition, in this country and on the continent. The nobleness of the Obstetric art is eloquently vindicated throughout. DR. TYLER SMITH would banish the midwife from this department altogether, just as surgery banished the barber, and medicine dismissed the monk. The lecture contains some interesting observations on the different tendencies of Protestant and Roman Catholic practice in preferring the life of the mother or her offspring, and also a criticism of the plan of tearing away the placenta before delivery, in placenta previa; a practice which, it is maintained, sacrifices the child, and is an improper excess on the side of our national bias to prefer the life of the mother to that of the infant. We reserve our quotations for future lectures, otherwise there are many passages relating to these subjects which we should be glad to introduce to our readers.

In the Second Lecture, the three leading IDEAS of Obstetrics—Developments, Mechanism, and Motor Actions—are succinctly traced. It is shown that, up to the present time, our knowledge of parturition as a motor function, had advanced little beyond the description given by Fabricius, the teacher of Harvey, nearly two centuries ago. It is demonstrated that the works of Drs. Robert Lee, Ramsbotham, Rigby, and other contemporary writers, scarcely contain a hint of the real physiology of labour. Full justice is, however, accorded to those who had previously contributed facts towards the elucidation of this function, as one belonging to reflex physiology. After resuming the progress of our knowledge of parturition, the author concludes as follows:—

"Thus, then, with the exceptions just named, a few paragraphs by physiologists, a few pages by obstetricians,—and these latter chiefly occupied by the purely mechanical part of labour,—make up the sum of our knowledge of the physiology of parturition. How is this to be accounted for? It certainly is not that parturition is a less important function than digestion, or respiration, or even the circulation of the blood, all of which have been so amply investigated. The uterus has been compared, by a distinguished living physiologist, to the stomach, as being the organ of nutrition and support to the species. We may, with equal or even greater justice, say that the uterus is to the Race what the heart is to the Individual: it is the organ of circulation to the species. Ages are the channels in which created beings circulate; and man passes continually from the womb of his mother onwards to the womb of time. The succeeding generations of human kind, following one after another, are, as it were, the pulses of the animal Cosmos. Parturition is the systole of the uterus, the unimpregnated state its diastole, and the living beings which flow on in countless numbers in the stream of life, may be likened to the myriads of globules revealed by the microscope in the circulation of the blood. In relation to the vast scheme of existence, parturition

does but assume its just proportions, and assert its rights to the attention of the physiologist, as the greatest epoch in generation.

"We must go on to develop the dynamical Idea, the physiological mechanisms of labour, of which at present there exists, within the pale of obstetrics, nothing but the bare data or formulæ for their working out—namely, the muscular structure, and the nervous endowments of the uterine system. The generation is but just passed away which denied the muscular structure of the uterus; and the very existence of the nerves of the uterus some are still found to deny. However, granting that the nerves and muscular fibres have been beautifully delineated by the scalpel of the anatomist, it remains still to study these parts in action. They exist as a picture, but they have not been studied as actors or performers in a drama; and there is even more difference between anatomy (as we now understand the term) and physiology, than there is between painting or sculpture, and dramatic representation." (pp. 29-30.)

The Third Lecture is one of the most important, and gives a full account of the different forms of Motor Action concerned in parturition. The share taken by volition, by emotion, by reflex action, and by the peristaltic action of the uterus, is here traced distinctly, for the first time, throughout the whole of labour, including the contraction and dilatation of the uterus and vagina, and the actions of the muscles of respiration. The account is both analytic and synthetic, the single and combined actions of labour being described with great clearness. Much information is extracted from the consideration of cases, in which some, or nearly all, of the motor powers are subtracted, as in labour with insensibility, paraplegia, or delivery after death. Dr. Smith sums up his analysis as follows:—

"Volition may be said to affect the process only indirectly. Emotion has a direct influence, but it is accessory rather than essential to its performance. Reflex action is the great physiological power, which being absent, the function of parturition could not be properly performed. Peristaltic or Immediate action is the basic or radical element upon which the other causes of motor action operate." (p. 48.)

On this subject we quote a few of the instances, adduced by Dr. Smith, in order to prove the existence of reflex actions of the uterus:—

"The Reflex actions of the uterus are very numerous, and it is upon these, and the numerous extra-uterine reflex actions excited during the process, that the natural performance of parturition essentially depends. Contraction of the uterus, from irritation of the mammæ, as in the act of suckling the child; contraction of this organ from the cold water douche, applied to the vulva or the abdominal surface; contraction excited by irritating the rectum, as by stimulating enemata; or of the stomach, by drinking a gulp of cold water; of the ovaria, by the presence of the menstrual nisus; of the vagina, by manual irritation, as in 'taking a pain'; of the os uteri by irritation, as in the introduction of the hand into the uterus,—are all to be considered as so many instances of reflex spinal action. Thus, in parturition, the uterus may be excited, in a reflex form, by irritation of the mammary incident excitor nerves; the pubic and abdominal branches of the intercostals; the rectal; the gastric division of the pneumogastric; the ovarian nerves; and also by the nerves of the vagina, and the os and cervix uteri." (pp. 34-5.)

An excellent account is given of the dilatation of the os uteri in this lecture. It is contended that the os uteri dilates during labour partly as a muscular and dilatile structure, and partly as a non-muscular but distensile tissue. Its active or muscular dilatation is shown to belong to the reflex actions. We quote a passage which applies not only to the os uteri, but to all the orifices of the pelvic, abdominal, and thoracic organs:—

"For the performance of all the acts of ingestion and egestion, the thorax, abdominal cavity, and pelvis, may be looked on as forming one cylindrical

cavity, supplied with a number of stops, which close and open with admirable accuracy under the control of the nervi-motor apparatus, presiding over the various acts of ingestion and retention, egestion and exclusion. This is, in fact, one great function of the true spinal marrow, and its excitor and motor nerves. The materials for ingestion and egestion, by their physical qualities alone, independently of sensation, supply, when brought into contact with the ingestive and egestive tubes, the necessary stimulus to the excitor spinal nerves, whereupon all the necessary motor phenomena, both of contraction and dilatation, occur with the nicest regularity, and the most perfect aptitude for the functions to be performed." (p. 48.)

It has long been disputed whether the os uteri is really muscular or not. Dr. Smith disposes of these doubts in the most satisfactory manner, in a few words :—

"Owing to the mixed mechanical and muscular dilatation of the os uteri, it generally opens slowly; cases, however, occur in which, after long-continued rigidity, it dilates so suddenly, that even from this fact alone it is difficult to consider it a mere mechanical distention, the resiliency of the part affecting its subsequent contraction. But the strongest physiological proof of the existence of muscular power in the os and cervix uteri, is the forcible contraction which sometimes occurs after full dilatation—as, for instance, in cases of encysted placenta, in which the fingers can only be introduced with the greatest difficulty; and again, in inversio uteri, where the speedy and powerful contraction of the cervix is one of the elements of the accidents most opposed to the re-position of the organ." (p. 46.)

We have been struck with the observations on the direction in which the peristaltic action of the uterus spreads over this organ, which are well worthy of study. We conclude our notice of this lecture by a quotation respecting post-mortem delivery, a subject about which much diversity of opinion has existed :—

"The solution of these extraordinary phenomena, though it has not hitherto been given, does not seem very difficult. A slow reflex action of the uterus may possibly continue long after the rhythmic respiratory movements have ceased, as long, indeed, as the body retains its warmth. But we know that the heart, œsophagus, and intestines, may be excited to peristaltic action after death; violent peristaltic action is often a part of the act of dying; and I am of opinion, that in the human uterus, it is peristaltic action chiefly which expels the child when the mother has died during labour undelivered. There is, however, another source of post-mortem muscular contraction, which I believe has never been referred to in the case of the uterus—this is, the post-mortem muscular spasm. We know that in the case of an analogous organ—the heart, the rigor mortis occurs to such an extent as to empty the ventricles of blood, and even to simulate concentric hypertrophy. The extrication of gases by decomposition in the abdomen, the explanation usually adopted, is not sufficient to account for the expulsion of the fœtus after death." (pp. 39-40.)

The Fourth Lecture is devoted to the Motor Actions of the Fallopian tubes and the vagina, in menstruation, coitus, conception, and parturition. There are good reasons for believing that the Fallopian tubes embrace the ovaria by a muscular action, in menstruation, coitus, and parturition. Dr. Smith considers this embrace a reflex action excited by the irritation of the ovaria in menstruation and œstruation, and by the vagina in coitus. He declares it to be, at the same time, one of the most remarkable instances of reflex action, and of the proof of the independence of the reflex function as regards sensation and volition.

"In the whole range of reflex action, or, indeed, of physiology, there is nothing more extraordinary than the reflex action of the Fallopian tubes from ovarian excitation. There seems a positive instinct, a power of selection, in the exactitude with which their fimbriated extremities find out and

embrace the ovaries, but for which, extra-uterine fœtation, with its great dangers, would be very frequent. In this internal embrace, the most perfect adaptation occurs, in the total absence of sensation and volition. Many minds have felt a difficulty in receiving the doctrine of the independent and insentient action of the true spinal marrow, and its excitor and motor nerves, because of the extraordinary adaptation and appearance of design sometimes observed after decapitation or decerebration, being fain to consider such adaptation a proof of the presence of design and will, in the spinal marrow itself. Here, in the case of the Fallopian tubes, there can be no suspicion of volition, and yet the motions of these muscular tubes are so unerring in their power of embracing the ovaria, and of not seizing the intestines or the abdominal parietes, as quite to equal any of those actions which have been supposed to be emotional or voluntary in decapitated animals." (p. 55.)

But the most important point respecting the motor phenomena of these tubes, is their application to the elucidation of the motor physiology of labour. Dr. Smith insists that the Fallopian tubes and the uterus must be viewed as a whole, so that the motor actions of one part of the parturient canal may throw light on the motor actions of the rest. He compares the contraction of the Fallopian tubes, during menstruation, to the contraction of the fore-limbs of the frog during oviposition, and to the contraction of the uterus during labour, indicating that in these apparently remote phenomena, ovarian irritation is the single exciting cause. In this the author foreshadows his theory of the cause of labour, to which we shall presently have to direct the special attention of our readers.

The contractile and dilatile actions of the vagina, in the impregnated and unimpregnated states, are clearly described; but it is as an excitor of reflex action in other parts, rather than as the seat of motor action itself, that the vagina is remarkable. We quote the following description of the vagina as a parturient organ:—

"The chief outlets of the mucous cavities, except the vagina, are guarded at the orifices by sphincters. The constrictor vaginæ, at the entrance of this canal, represents the sphincters found in other situations. It is a thin, small muscle, not perfectly orbicular. A perfect sphincter in such a situation would indeed be out of place, owing to the immense dilatation required of the vagina in childbirth. An ordinary sphincter, if it existed, must far exceed the sphincter ani in size. When labour comes to be treated of, it will be seen how a sphincteric muscle in this situation is compensated for, and how well the actual arrangement contributes to the safe expulsion of the fœtus. The cellulo-fibrous sheath immediately surrounding the mucous membrane of the vagina is an extension of the fibrous tissue of the uterus itself. I have already said that the os uteri is formed, like the pylorus, by a reduplication of the mucous and contractile tunics, only this mode of formation is more exaggerated in the os uteri than in the gastric sphincter. In labour, the process of dilatation causes the almost entire obliteration of the os uteri, and the uterus and vagina become, as it were, one uninterrupted canal. The vagina, and particularly the upper portion, enlarges in size during the latter months of pregnancy. A real growth of the fibrous or muscular sheath, similar to the growth of the muscular tissue of the uterus, with which it is continuous, takes place, though in a less degree. We know that during the early months there is some contraction, but in the later months an enlargement, and even protrusion, of the vagina; and during labour, not only is the diameter increased, but the length of the vaginal canal becomes greater. This could hardly exist, without an actual increase of size." (p. 59.)

The Fifth Lecture contains an account of the anatomy of the Nerves of the Uterus. If Dr. Robert Lee's writings contain the descriptive anatomy of the uterine system, this lecture may be said to contain its physiological anatomy. After describing the relations of the pneumogastric, the phrenic, the intercostal, the lumbar, and the sacral nerves, with the ganglionic nerves in the chest, abdomen, and pelvis, Dr. Smith observes:—

"If we adopt the view, that the plexuses of the abdomen, like the external plexuses, are mechanical adaptations for mixing nervous fibres from different sources, and apply it to the uterine nerves, it becomes a possibility, and, I may say, a probability, that the uterine nerves are more variously derived than any other nerves of the body. They may be derived from different points of the great nervous tract between the origin of the pneumogastric nerve, in the medulla oblongata, and the origin of the sacral nerves, in the cauda equina. There is no actual impediment to the approach of nervous fibres to the uterus, from the medulla oblongata through the medium of the vagus; from the cervical portion of the spinal marrow by the phrenic; from the thoracic by the splanchnic nerves; and from the dorsal by the compound lumbar branches of the sympathetic, and from the sacral nerves, which latter come directly from the spinal chord." (p. 65.)

Dr. Lee has given the proofs, supplied by dissection, of the existence of a large supply of nerves to the uterine organs; and Dr. Smith adduces the physiological proofs of the uterine nervous supply, which are scarcely less convincing. The latter says:—

"No one doubts that the uterus is susceptible of pain; this is one proof of a nervous connexion between the uterus and the brain as the organ of sensation. No one doubts that an emotion of the mind may excite the uterus to powerful contractions; this is another proof of nervous connexion between the brain and the uterus. No one denies that, during pregnancy, the uterus affects synergetically the most distant organs, producing the changes in the mammæ and the gastric disturbances, which are so universal; these facts are explicable by the existence of nervous communications between the uterus on the one hand, and the stomach and mamma on the other. There is no other route than that afforded by the nervous system. No one denies, either, that, after parturition, the breast or the stomach may excite the uterus to action: these facts further prove a reciprocal influence *from* the stomach and breasts *to* the uterus. Such facts are, in their sphere, as convincing as though the eye could see a great concourse of nerves running between these organs. A physiological fact is worth quite as much as an anatomical fibre. These communications can only take place through the medium of nerves, and whether there be one channel or many; whether the chief place be given to the spinal fibrillæ of the sympathetic, or to the proper nerves of the spinal chord, the necessity for uterine nerves is equally inexorable. There *must* be nerves, and there must be nerves *sufficient* for the functions to be performed. Anatomical facts can never give the lie to the facts of physiology." (pp. 67-8.)

The following observations apply to another *quæstio vexata*, namely, the increase in the size of the nerves of the uterus; they afford a powerful support to the dissections and descriptions of Dr. Lee:—

"Those who maintain that the nerves of the uterus do not increase in size during gestation, must show, not only that there is no such increase in the gravid, as compared with the virgin uterus, but they are bound to show, that the nerves relatively diminish in breadth during pregnancy; for when we consider the extent and superficies of the fully-developed gravid organ, it must be evident to the meanest capacity, that if the nerves of the virgin uterus, remaining stationary as regards size, are merely stretched upon, drawn out, or unfolded, over and in, the enormously increased gravid organ, they ought proportionately to appear as much *diminished* as the growing tissues of the uterus are *increased* in size. The length of the virgin uterus is two inches; of the gravid, at the end of gestation, twelve inches. The weight of the virgin uterus is one ounce; that of the fully-developed gravid organ, twenty-four ounces. The disproportion in size between the fœtus and the adult man is not nearly so great as the disproportion between the virgin and the parturient uterus. If we could conceive the nerves of the fœtus stretched out or unwound in the space of nine months, so as to accommodate the skeleton of the adult, we should have but an imperfect idea of

the mechanical marasmus of the uterine nerves at parturition, which we are called upon to believe, if the nerves do not actually grow during gestation." (p. 72.)

We shall not dwell at any length upon the Sixth Lecture, the subject of which is the Ovular Theory of Menstruation. An elaborate history of this theory is given, in which their respective shares are given to Cruikshank, Dr. John Power, Dr. Lee, Professor Baer, and those who have followed them, MM. Negrier, Gendrin, Raciborski, Bischoff, and other physiologists. But the great points brought prominently forward are, the homological relations which exist between menstruation in the human subject, œstruation in mammalia; oviposition in birds, amphibia, fishes, and insects; and parturition in the human subject and mammalia: and also the arrangement of these varied functions around the ovaria as the common sexual centres. These homologies bring us a step nearer to the cause of labour.

We might quote many admirable passages from the lecture on menstruation, but we limit ourselves to the following philosophical remarks:

"Gregory has beautifully said, 'Hæc Naturæ lex, hoc consilium; ut singuli pereant homines, gens humana floreat.' This is exemplified in the phenomena of menstruation, conception, and parturition. The identical processes which frequently lead to disease and death in the individual, are resorted to by Nature for the separation of the ovule and the ovum from the parent system, in the perpetuation of the species. In pathology, how often do we see death caused by the exudation of fibrin in the trachea, or by perforation of the intestine, or by sphacelus, from obliteration of the vessels of a part. In the transmission of the race, we see an increased action perforate the peritonæum, for the escape of the ovule; we see coagulable lymph thrown out in the Fallopian tubes and the uterus, to effect the adhesion, and for the support, of the ovum during utero-gestation; and lastly, on the conclusion of pregnancy and parturition, compression of the uterine vessels on the maternal side, and a diversion of the circulation on the side of the fœtus, cut off the supply of blood to the placenta, when it is forthwith expelled as dead matter. So nearly are death and life connected!" (p. 87.)

In the Seventh Lecture, the various motor disturbances of Pregnancy, vomiting, cough, tenesmus, strangury, and cramp, etc., are discussed. The reflex nature of gastric, rectal, and vesical disturbance is at once obvious, and suggests some valuable hints towards treatment. Dr. Smith offers a new explanation of the cause of the distressing cramps of pregnancy, which is well worthy of attention. He considers cramp a disorder of reflex origin, and not the result of pressure on the sacral nerves, as usually taught. His reasons for this view are, that cramp sometimes affects the upper extremities, where pressure is out of the question, and that it is most common in the recumbent position, when least pressure is excited. He also compares the cramps of pregnancy to the cramps of cholera, and the cramps which occur in paralysis, from intestinal irritation. These and various other considerations leave little doubt of the incorrectness of the current notions respecting this affection.

Another subject treated at considerable length in the present lecture is the nature of the abdominal movements of pregnancy. These movements have been almost universally and entirely attributed to the fœtus. Dr. Smith strongly combats this exclusive view, with a variety of facts and observations, of which the following are the most important:—1. The early period at which movements may be felt, namely, about the sixteenth week, when the limbs of the fœtus are extremely feeble, particularly the inferior extremities. 2. The great violence and volubility of the movements in some cases, in which it appears as though the head of the child moved about from one part of the abdomen to another. 3. The influence of the emotions of the mother over these movements, certain emotions increasing or diminishing them in a remarkable manner. 4. The presence of these movements in cases in which the fœtus has perished, or in cases of uterine tumour without pregnancy.

5. The indentations sometimes observed on the limbs of new-born children, and caused by the limbs lying for a long time in precisely the same situation. 6. The remarkable fact, that the abdominal movements have been observed in great force in cases of amyelencephalic fœtus, or entire deficiency of both brain and spinal marrow. Dr. Smith quotes a case most distinct of this kind from M. Lallemand, and since the publication of his lectures two cases in point have been furnished him by Mr. Hoadley Gabb, of Hastings, and M. Zavisiano of Corfu. In these cases the centres of muscular motion, cerebral and reflex, were absent. But we ought to add, that though Dr. Smith maintains that all the abdominal movements are not fœtal, he does not deny the presence of motion in the fœtus. He teaches that these movements in part belong to the uterus, in part to the contained ovum, and he endeavours to define the two classes of movements.

"If the abdominal movements in the latter months of pregnancy are very carefully observed, two tolerably distinct kinds of motion may be made out. The one is a movement traversing irregularly over the abdomen, and conveying the sense of hardness either in ridges or in eminences underneath the hand. These movements are often felt at several points of the uterus simultaneously, and are accompanied by pain. When the hardness is most apparent, the patient will say that the child kicks and hurts her. These movements will in some cases continue for hours together, particularly at night. When very violent, they give the idea of a blow or a succession of blows, if the hand be laid upon the abdomen. The other kind of movement is distinct from that I have been describing; it conveys to the hand a sudden shock or impulse, like that obtained by repercussion in ascites, only stronger. The abdomen gives, as it were, a sudden shudder; it is like the quick and temporary movement of a young infant touched in its sleep. The first and most frequent of these movements I believe to be purely uterine; the second, fœtal, and to be felt only in undoubted pregnancy." (p. 96.)

Another important subject, referred to in this part of the work, is the cause of the ovoid position, and consequently of the presentation of the fœtus. We should premise that much difference of opinion prevails respecting "tone"; by Dr. Marshall Hall it has been considered to depend on the *direct* influence of the spinal marrow, but Dr. Smith has treated of it as depending upon a *reflex* spinal action.

"The state of the fœtus in utero is peculiar: as regards the absence of volition, it resembles deep sleep or cerebral paralysis, and it is comparable, in some degree, to the state of hybernation in animals, in which a low degree of respiration and oxygenation of the blood is kept up. In all these states, the muscles, which are subject to voluntary regulation, contract from the principle which has been called muscular tone; the sphincters are all closed, and the flexor muscles, as the stronger, acquire a mastery over the extensors, so as to contract the limbs. The muscles of the fœtus are, I have no doubt, subject to this form of contraction, its final cause being to keep the fœtus in an ovoid shape, adapted to its retention within the uterus, and to its expulsion through the parturient passages at the time of birth. The hidden Phidias of the womb not only moulds each fibre and particle in the inward laboratory, but arranges the limbs according to the fashion best suited to their preservation during the embryo state, and their delivery at the appointed time of labour. The flexion of the limbs of the fœtus in utero is not merely a passive, but an active state; for even after birth, volition is a long time in acquiring the power of extending the limbs with precision." (p. 100.)

We now come to the Eighth Lecture, perhaps the most original of the entire series, in which the Cause of Labour is, for the first time, investigated satisfactorily. It will be interesting to give the author's preliminary observations, which set forth the circumstances under which this important investigation was commenced:—

"In 1842, while studying the more obvious reflex actions of parturition,

the cause of the first contraction of the uterus met me as a barrier beyond which it seemed impossible to pass. The pious exclamation of Avicenna, 'At the appointed time, labour comes on by the command of God,' expresses his idea of the profoundness of the mystery, and his hopelessness of its solution. The words of the Arabian physician agree with the candid admission of a modern writer, Dr. Carpenter, that 'we know nothing' of the reason why the period of parturition should be just forty weeks after conception. And, though hypotheses have been numberless, no intermediate author has given anything like a reasonable solution of the mystery in which this subject has always been involved. I began by steadily considering the first motor phenomenon of labour—namely, the equable contraction of the uterus which occurs before the actual pains of labour commence; endeavouring to understand the nature of this contraction, and why the uterus should acquire the special tendency to contract at this time in preference to any other." (pp. 106-7.)

At first Dr. Smith supposed the muscular irritability of the uterus, excited by the mature fœtus, to be concerned in the first contractions; but it is obvious that such an explanation would not account for the action of the uterus observed in ventral pregnancies at the end of the term of gestation. As all the other acts of egestion in the economy are spinal and reflex in their nature, Dr. Smith was induced to seek for some special excitor of the uterus of a spinal kind. A variety of facts led him to the ovarium and the ovarian nerves, and an examination of the nature and results of ovarian excitement in the different classes of animals, established the periodic excitement of the ovarian nerves as the true cause not only of human parturition, but of every other variety of parturient action. It is first shewn, that in the lower animals,—in oviparous fishes, for instance,—coitus and oviposition are one act, ovarian excitement being the essential part of the process. As we ascend in the scale, the sexual organs become developed and divided, and the sexual function also becomes more complex. This physiological development is traced upwards from the most simple ovarian excitement, through the various forms of ovi-expulsion up to the human female, in whom coitus, menstruation, conception, and parturition, are all separate acts. Still, notwithstanding this division, ovarian excitement is the fundamental condition under which they all occur, by which, in fact, they are produced. In these various acts, a number of motor actions occur. In menstruation, there is the grasp of the Fallopian tubes; in conception, the ingestion of the ovum into the uterus; and in parturition, the expulsion of the ovum from the uterus. In all these instances, it is ovarian excitement which produces, in a reflex manner, the first contractions of the uterus and Fallopian tubes. We must, according to our author, consider the highly organized ovarium of mammalia, the Fallopian tubes, the uterus, and the vagina, as forming one sexual organ, the analogue or ulterior development of the simple laminar ovarium of the fish, which exists and performs its functions without any accessories. The ovarium is the essential part in both cases, and in the complex organs of the mammalia, the different parts are connected or tied together by the medium of the reflex function. The reflex nervous arcs, between the different portions of the parturient canal, are, as it were, bridges, connecting them together, and giving them UNITY. Dr. Smith points out that oviposition and coitus go on together, or succeed each other almost immediately, in insects, fishes, amphibia, and birds. In the silkworm-moth, oviposition succeeds immediately to coitus. An interesting comparison is made between the cocoon of the silkworm, the nest of the bird, and the uterus of mammalia. The nest is an external uterus, prepared by the parents; the cocoon is an external uterus, prepared by the offspring itself. In the salmon, coitus consists merely of external pressure, during which ova escape, and are fecundated by the male. In the frog, oviposition and coitus proceed at the same time. In birds,—the common hen, for instance,—the sexual embrace is permitted imme-

diately after oviposition. These results of ovarian excitement admit of comparison with the sexual phenomena of the females of mammalia. Œstruation and menstruation, without impregnation, are comparable with the unimpregnated oviposition of birds, insects, and amphibia. Œstruation and menstruation, with impregnation,—in fact, conception,—are comparable to the impregnated oviposition of the other classes of animals. As a specimen of the mode in which Dr. Smith unites ovarian and parturient action, we quote some of his observations on the generative phenomena of mammalia:—

"In many of the lower mammalia we may witness the processes of oviposition or œstruation, parturition, congress, and conception, all going on as nearly as possible at the same time. In the guinea-pig, for instance, immediately that the young are dropped, the female admits the male, conception takes place, and a new utero-gestation commences, dating from the very hour of parturition. There is, in these animals, œstruation and ovulation going on in the ovaria while parturition is taking place from the uterus; and during or immediately after the expulsion of the young, the sexual heat developes itself. The same phenomena are present in all the mammalia, in a greater or less degree. In those animals of which we know the order of the œstrual periods, as the rabbit, the horse, and cow, the duration of pregnancy is a multiple of an œstrual period. Doubtless this law is as extensive as periodic œstruation itself. Not only is gestation a multiple of the œstrual period, but the time of parturition is positively an œstrual period. The maturation of ova, which has ceased during utero-gestation, is resumed, and the sexual instinct is predominant, just as though the uterus did not contain the product of a former ovulation and conception." (pp. 114-15.)

In the same way, Dr. Smith accepts the doctrine that the duration of human gestation is a multiple of the catamenial period. But he goes on to consider parturition as really a menstrual period, and he compares the lochial to the catamenial flow; he teaches that in parturition the developed *ovum* moves on from the uterus to the external world, just as in menstruation the unimpregnated *ovule* moved on from the ovarium to the uterus. This view is supported by a comprehensive array of facts, and from the whole series of observations, Dr. Smith makes the simple yet great induction, "that ovarian excitement is THE LAW OF PARTURITION IN ALL ITS FORMS OF OVI-EXPULSION."

We conclude our notice of this interesting lecture by quoting the author's account of the mode in which ovarian excitement produces the commencement of the series of acts which constitute human parturition. We should observe that Dr. Smith points to the *corpus luteum* as the portion of the ovarium specially involved in the excitement of parturition.

"When the ovarium is anatomically severed from the rest of the sexual apparatus, as in the mammalia and the human female, the ovarium is connected with the rest of the parturient canal by a series of reflex arcs. By means of the spinal excitor nerves of the ovaria, that portion of the spinal centre which presides over the actions of the uterus is, at the end of utero-gestation, thrown into a state of excitability or polarity, somewhat resembling the general spinal excitability of tetanus. The uterine nervi-motor system being thus thrown into such a state of persistent excitability, that the uterus firmly contracts equably upon its contents, the fœtus itself, hitherto defended by the liquor amnii, becomes an ordinary excitor, and the reflex actions of labour are gradually established. The equable contraction of the uterus, preceding labour, is, in effect, just as though the membranes had been punctured, as in the operation for inducing premature delivery, and the head of the fœtus brought to exert pressure upon the os and cervix uteri." (p. 123.)

Such is the solution of one of Nature's greatest mysteries.

The next two Lectures, the Ninth and Tenth, are occupied with the causes and prevention of Abortion; but as we purpose, in a future number, to review the practical portion of Dr. Smith's work in a separate notice, we shall now pass these two lectures, and proceed to the Twelfth and Thirteenth, which treat

of the Physiology of Labour, and the causes of the Sexual Periodicities in the human female. These two lectures complete the strictly physiological portions of the volume before us.

In the Eleventh Lecture we come to the actual Physiology of Parturition. And here we pause to make a few observations on the arrangement of the different stages of this function proposed by Dr. Tyler Smith. Up to the present time, accoucheurs have, almost implicitly, followed the division of Denman. Of the three stages of this celebrated accoucheur, the first extends from the commencement of labour to the full dilatation of the os uteri and the discharge of the liquor amnii; the second begins at the full dilatation of the os uteri, and ends with the expulsion of the fœtus; while the third includes all that relates to the separation and expulsion of the placentes. Dr. Smith proposes a modification of this division, founded on certain physiological considerations. He would divide this function into five stages, as follows:—

I. The Preliminary Stage, in which the preparations for actual labour are made.

II. The stage of Dilatation, in which the os uteri is dilated for the passage of the presenting part of the fœtus.

III. The stage of Propulsion, in which the fœtus is propelled through the os uteri and the vagina.

IV. The stage of Expulsion, in which the fœtus is expelled through the external parts.

V. The Supplemental stage, in which the placenta is expelled, and the uterus returned to a state of permanent contraction, and at length, of rest.

Thus it will be seen, from Dr. Smith's arrangement, that actual labour itself, consists of three physiological stages, namely, Dilatation, Propulsion, and Exclusion; the Preliminary and Supplemental stages are but accessory to these.

In the *Preliminary* stage there is little or no pain, the uterus descends somewhat, a permanent contraction of the organ takes place, rendering it more distinctly firm and ovoid than before, and the abdomen becomes quiet, from the cessation of the peristaltic actions of the uterus. There is an irritable state of the rectum and bladder, leading to the frequent evacuation of the contents of these viscera. The effect of this irritability of the bladder and rectum is to free the pelvis and lower part of the abdomen from all unnecessary incumbrance, and so to give room to the parturient canal.

In this stage of labour, *the ovarian nerves* are the only excitors which are in action. The ovarian nerves, acting in the manner already indicated, produce the utero-spinal excitement upon which the contraction of the uterus depends. The ovarian excitement is the *first* in the order of events, the *spinal excitability* and the action of the uterine motor nerves follow. The equable uterine contraction, produced by the ovarian excitation, impels the presentation against the os uteri, and the mechanical excitation of the nerves of the os uteri, thus occasioned, gradually induces the actions of the next stage.

In the stage of DILATATION, sensation, secretion, and motor action are all involved; these are distinct pains, the flow of blood and mucus, and the proper motor actions of the uterus. The uterine contraction becomes intermittent instead of continuous. Each pain is attended by contractile efforts of the fundus and body of the uterus, and by dilatation of the os uteri. Dr. Smith discusses the nature of this dilatation very fully, proving it to be an active dilatation of a reflex kind. When the body of the uterus contracts, the tendency of the os uteri is to dilate. This dilatation of the os uteri, in parturition, is compared to the dilatation of the cardia when the œsophagus contracts in swallowing; to the dilatation of the sphincter ani when the rectum contracts; or to the dilatation of the sphincter vesicæ, which attends contraction of the distended bladder. The only difference is one of time, and the os uteri dilates slowly, because of its peculiar anatomical character,

to which we have already referred. Hitherto this subject has been very ill understood, though it is of great practical import. Attention is next called to the direction in which the motor force of the uterus is exerted, in this stage of labour. It is exerted downwards and backwards, in the direction of the triple axis of the child, the uterus, and the inlet of the pelvis. This is exactly the direction in which the fœtus is required to advance during this stage. Up to this point, the lower medulla only has been engaged in the reflex motor actions; but when the dilatation is complete, sickness or vomiting often occurs, and these prove that the medulla oblongata is now involved in the process. The dilatation of the cardia in sickness or vomiting reacts favourably on the os uteri and vagina; and if vomiting take place, it is beneficial, by giving room, and increasing the freedom of the respiratory actions of the succeeding stage of labour. The next point referred to, is the rigor which is generally observed at the conclusion of this stage, of which an excellent reflex explanation is given. Some highly original observations are made upon the evacuation of the liquor amnii, which now takes place. The preservation of the membranes entire, up to this period, is important, not only because it ensures fluid instead of solid pressure in the dilatation of the os uteri, but because the fluid pressure stimulates the excitor nerves less powerfully than the solid pressure of the subsequent stages. On the other hand, the rupture of the membranes, and the evacuation of the liquor amnii, at this point, not only provides more powerful mechanical excitation for the next stage, but, by diminishing the bulk of the uterus, gives greater facility for the action of the abdominal muscles. The perfect adaptation of even the slightest events in natural parturition, in this and a thousand other instances, is indeed most admirable.

In this stage of labour, *the ovarian nerves* are acting as excitors, as before, and *the nerves of the os and cervix uteri* come into play as additional excitors of the reflex actions. The only motor nerves involved, up to the point at which nausea or vomiting occurs, are *the motor nerves of the uterus*, and the uterus is the only muscle in action. The head, or presenting part, of the child, and the amniotic bag, are the mechanical excitors of the uterine nerves.

In the stage of PROPULSION, the uterine contractions are much more powerful than in the previous stages, and strong expiratory efforts accompany each pain. The more powerful efforts of the uterus depend on the circumstance, that the fœtus is now brought into direct contact with the internal surface of the organ, in consequence of the discharge of the amniotic fluid. The expiratory efforts are excited, from the irritation of the vaginal excitor-nerves, by the advancing head of the fœtus. Dr. Smith minutely analyzes the various muscular actions which are now in operation; but for this we can only refer to the work itself. We quote, however, a few words which illustrate the beautiful manner in which volition and emotion tend to prevent laceration in the powerful pains of this stage:—

"When the pain can no longer be borne, the short gasp or groan is exchanged for a cry which dilates the glottis, and the pain and contractions subside. The cry is a motor action, excited by the emotion of pain, and instantly relieves the uterus of all extra-uterine pressure. Thus the glottis may be compared to a safety-valve, which is thrown open by emotion whenever the pressure becomes more than can be borne with safety. By the influence of volition we have this valve entirely under our control, to open or to close it, as may be necessary. When the expiratory actions are weak, we can enjoin the patient to hold her breath, and when they are too intense, or too long-continued, we can encourage her to cry out, which is of course equivalent to dilating the glottis, and expiring the contents of the thorax." (Pp. 162-163.)

In this stage, the motor force of parturition is applied in quite a new direction. The direction in which the fœtus has now to pass, is that of the axis of the outlet of the pelvis, or downwards and forwards. This direction is

given by the contractions of the abdominal muscles, which urge the fundus uteri against the vertebral column. It is remarkable also, that the long axis of the head, the advancing part, corresponds very closely with this new parturient and axis.

The excitor spinal nerves acting in this stage, are *the ovarian, the uterine, and the vaginal nerves.* These are now in relation both with the medulla oblongata, as the centre of the respiratory arcs, and with the medulla spinalis inferior, as the centre of the utero-spinal excitor and motor nerves. The motor nerves which are excited to action, are *the uterine nerves,* and the whole class of *respiratory motor nerves.*

In the Stage of EXPULSION, the actions of the previous stage are continued, but a new series of actions come into operation as the head of the child passes the ostium vaginæ. We quote a description of these actions, which it would be difficult to condense :—

"The perinæum, after being distended to the utmost, is now retracted over the head by the action of the levatores ani; the sphincter ani and sphincter vesicæ dilate suddenly, the vagina contracts upon the advancing mass, and the head glides rapidly into the world. The dilatation of the two sphincters, between which the vagina is placed, compensates admirably for the absence of a perfect sphincteric muscle at the outlet of the parturient canal. The effect of this double dilatation is, that at the precise moment when there is the most imminent danger of laceration, there is a sudden and considerable removal of tension from the parts endangered. The dilatation of the sphincters is partly dependent on the sensation and emotion of severe pain, and partly on the reflex dilatation peculiar to the sphincteric muscles. This view of the subject gives interest and importance to an action which has never been looked upon but as a very disagreeable *contretemps.* Physiology here, as in many other instances, transmutes the meanest actions of the economy, rendering them noble by virtue of their uses! At the same moment that the orifices of the rectum and bladder are thrown widely open, there is generally a dilatation of the glottis. Even from women who restrain the expression of their emotions during the rest of labour, a cry of pain escapes at this juncture; this cry is necessarily accompanied by an open state of the glottis. The opening of the glottis is not at all accidental or voluntary, but is as regular and involuntary as its closure during the propulsive pains. Its effect is suddenly to take away the expiratory pressure from the expulsive action. Without this combined action of the glottis, and the sphincters of the rectum and bladder, for the defence of the ostium vaginæ, recto-vaginal laceration must be a very common accident of parturition. Such would inevitably be the frequent result of closure of the abdominal and thoracic cavities at all points, except that at the point of exit for the fœtus, in the final throes of labour." (Pp. 163-164.)

The excitor nerves involved in this stage, are *the ovarian, uterine, and vaginal nerves, and the nerves of the ostium vaginæ;* the upper and lower medulla are implicated; and the motor nerves in action include the *uterine, vaginal, and respiratory nerves,* and *the nerves of the rectal and vesical sphincters.*

In the SUPPLEMENTAL Stage the objects to be attained are, the expulsion of the placenta, and the contraction of the uterus so as to avert hæmorrhage. The uterus contracts intensely, from the great irritation supplied by the fœtus in passing the perinæum; it is afterwards excited by the placenta; on the separation of the placenta, the wound-like surface from which it has been detached becomes strongly excitor. But new excitors are brought into play at this juncture; the breasts excite the uterus powerfully whenever the child is applied, and every thing taken into the stomach produces uterine contraction. The uterine contraction is also aided by the maternal emotions.

The excitor nerves involved in this stage are *the ovarian, uterine, vaginal, mammary, and gastric nerves;* the motor actions are chiefly confined to the

uterus, and chief motors are the *uterine nerves*. We quote, as an addendum to our sketch of Dr. Smith's account of Parturition, his own summing up of the several parturient motor actions; than which nothing can be more graphic, or, we believe, more correct:—

"We can now review the order of the nervi-motor actions of labour, the series of excitor surfaces involved one after the other, and the regular succession of stimulus and contraction in the different stages of the process. First in the order of events, there is the excitation of the ovarian nerves, followed by the equable and continuous contractions of the uterus. Then there is the pressure exerted by the fœtal head, as yet defended by the liquor amnii, upon the os uteri, and the consequent excitement of the orificial nerves, with the answering and intermittent contractions of the uterus. In the next place, the vaginal excitor nerves are irritated by the pressure of the now advancing and undefended head, or presenting part of the fœtus, an irritation which calls forth the respiratory actions of labour in addition to the uterine contractions. Then we have the excitation of the nerves of the ostium vaginæ, and the remarkable modifications of motor action thus produced. After the expulsion of the fœtus, the placenta remains to supply an intra-uterine stimulus, sufficient to affect the now exalted excitability of the uterine nerves, and thus to cause its expulsion. When the placenta has been expelled, the excitation of the uterine surface, from which the placenta has been separated, the excitation of the mammary nerves by suckling, and by the secretion of milk, and the excitation of the pneumogastric, now in excito-motor relation with the uterus every time food or drink are taken, are, with the aid of emotion, and the continuing ovarian irritation which has been present during the whole of labour, perfectly sufficient in normal cases to prevent hæmorrhage, and gradually to effect the return of the uterus to the contracted and comparatively small size of the unimpregnated woman who has borne children." (Pp. 167-168.)

The whole account of labour is in the highest degree original. We do not know of any work in which any one of the many important points we have reproduced in our hurried abstract, has been treated satisfactorily by previous writers. We are at a loss which to admire most, the simple clearness with which point after point is evolved from obscurity, or the grandeur and beauty of the whole physiological problem.

The close of this lecture contains, we believe, the first published idea of the division of the reflex arcs of the spinal marrow into a vertebral, or zonal, arrangement,—a topic which has subsequently been touched upon by Dr. Gull in the Gulstonian Lectures of the present year. Dr. Smith observes: "As the vertebræ of the vertebrata are analogues of the rings of invertebrate animals, there should also belong to each vertebra the representative of a spinal centre. Are not the reflex arcs collected together in the medulla oblongata, the spinal centres of the cranial vertebræ? and are not the reflex arcs of the lower medulla the spinal centres to the pelvic rudimentary vertebræ? This view brings the reflex motor arcs of the spinal centre into harmony with the splendid ideas of Oken, Goethe, and their distinguished successors in archetypal anatomy." (P. 74.)

In the Twelfth Lecture, Dr. Smith attempts the explanation of the CAUSE OF THE SEXUAL PERIODICITIES in the human female,—a point of inquiry hitherto considered unapproachable. The first thing he essays to do, is to array all the important facts relating to the synergic or reciprocal actions of the three great organs of the sexual system—ovaria, mammæ, and uterus—into six groups, as follow: 1, the actions of the ovaria upon the mammæ, as in the tumidity and pain in the breasts from ovarian irritation; 2, the actions of the ovaria upon the uterus, as in the secretion of the catamenia from ovarian excitement; 3, the actions of the mammæ upon the uterus, as in the production of abortion by irritation of the mammæ; 4, the actions of the mammæ upon the ovaria, as in the arrest of ovulation by lactation; 5, the actions of

the uterus upon the ovaria, as in inflammation of the ovaria from uterine irritation; 6, the actions of the uterus in the mammæ, as in the secretion of milk excited by uterine irritation. Under each head we have merely given one instance of synergic or sympathetic action; but a variety of instances are given by Dr. Smith, from which we have, for the sake of brevity, selected the above. Dr. Smith further believes that physiological actions are constantly going on between all these organs, in the directions indicated: He says,

"There is a remarkable synergic balance preserved between the three great organs of the sexual system,—namely, the Uterus, Mammæ, and Ovaria. In the virgin state, the condition of the ovaria at each ovarian periodic excitement, excites the uterus to secrete the catamenial flow. When impregnation has occurred, the changes set up in the uterus during the development of this organ and its contents, react on the ovaria, and interfere with the ovarian periodicities, so that they become masked during the whole term of pregnancy. At the time of parturition, the ovaria and uterus are the seat of a special excitement, and it is this excitement of the uterus and ovaria which excites the mammæ to the secretion of milk for the supply of the new-born infant. After delivery, the uterus soon returns to a state of comparative repose; but during lactation, the actions going on in the mammæ, like those of the pregnant uterus in ordinary cases, prevent the full development of the ovarian periods. As soon, however, as lactation and the mammary development have ceased, the uterus, breasts, and ovaria, all resume their ordinary periodicity, and ovulation and the catamenial flow proceed regularly until a fresh impregnation occurs. Thus the catamenial cycle of twenty-eight days is departed from at conception for another cycle,—namely, that of gestation, which consists of 280 days, or ten lesser cycles. After the completion of gestation, a new cycle is commenced,—that of lactation,—upon the completion of which the system returns to the simple catamenial cycle. These cyclical and epicyclical periods are themselves all included in another great period of development, extending from puberty to the decline of the catamenia." (p. 179.)

Dr. Smith bases his explanations on these facts. First, taking the catamenia. He believes, that during the four or five days of the catamenial flow the ovaria and mammæ, but chiefly the ovaria, are acting intensely upon the uterus, exciting the uterine secretion, but that on the completion of the discharge, the uterus and mammæ react upon the ovaria, but in a moderate degree, preparing the ovaria for the next ovulation. In other words, during four days, the ovaria and mammæ are directing the uterus; during other twenty-four days the uterus and mammæ are influencing the ovaria. According to this view, the twenty-four days during which the ovule is being matured in the ovaria, is as much a periodicity as the four days of the uterine discharge, and the catamenial period of twenty-eight days is simply a record of the time occupied in one action and reaction of the sexual organs upon each other in the unimpregnated female.

During utero-gestation, Dr. Smith teaches that neural actions are going on between the three sexual organs, which do not at this time result in ovulation and menstruation, but in the development of the gravid uterus, the preparation of the breasts for lactation, and the maturation of the corpus luteum. These reciprocal actions go on during the space of ten catamenial cycles, at the end of which time, ovarian excitement is set up, which, in turn reacts upon the uterus, and excites the first uterine contractions of labour. In lactation, Dr. Smith believes that the various actions are directed chiefly to the mammæ; the actions towards the uterus and ovaria being at their minimum, so that during ordinary lactation, neither ovulation nor menstruation proceed.

"In the unimpregnated state, when the catamenia are regular, the mutual actions and reactions between the uterus, breasts, and ovaria, proceed regularly, preserving each organ in its physiological condition. At this time the Ovaria are as it were the centre of the sexual system. The sum of the actions

is to keep up the periodic maturation and dehiscence of ovules from the ovaria. To this the actions of the breasts and uterus all tend. When impregnation has occurred, the mutual actions still go on between the three organs; but the Uterus has now become the sexual centre, the actions of the breasts and ovaria all tending to promote the development of the uterus. During utero-gestation the ovaria and mammæ remain comparatively quiescent. This state of things continues for ten sexual periods, until the phenomena of parturition occur. Another change now supervenes; the reciprocal actions continue under a fresh aspect, and the mammæ now become the centre of the sexual organs, every action becoming subservient to the maintenance of the mammary glands in the secreting condition." (p. 184.)

"We can observe how the development of the ovaria at puberty sets the catamenial cycle in motion, consisting of the actions of the ovaria, uterus, and mammæ. The first ovarian excitement, which probably appears in the usual course of growth or development, is, by the actions and reactions it excites between these three organs, the cause of all the phenomena, not only of the first catamenial cycle, but of all the purely catamenial periodicities which occur in the unimpregnated state, from puberty to the decline of the catamenial function. Again, we may perceive how, upon the act of impregnation, another stimulus comes into operation, which, in its turn, sets the cycles of gestation and lactation in motion. The ovario-uterine excitement produced by the impregnated ovule supplies the momentum, which, acting and reacting between the reproductive organs, is the cause of the periodic phenomena of gestation and lactation, including the cause of labour and the first secretion of milk in the mammæ. Upon the conclusion of the cycles of gestation and lactation, the stimulus imparted at conception having exhausted itself, the organs of reproduction again fall back upon the catamenial periodicity.

"These actions are, as it appears to me, dissimilar to reflex actions, and they may be referred to a general Law of action and reaction in the animal economy. They are themselves the result of a triple synergy, united and tied together, as it were, by the spinal centre, and involving neural actions to and from the nervous centre, and between the organs themselves, in no less than twelve different directions, which, balancing and controlling each other, regulate the functions of the three organs in their alternating states of rest and activity. The whole would seem to be an arrangement for giving as much simplicity and harmony to the sexual system, in the state of segregation in which it exists in the higher animals, as is found in those lower animals in which the reproductive faculty is confined to one organ—namely, the ovarium. By this tri-synergic and tri-cyclical arrangement, the triplicate system of the human female approaches towards Unity. The uterus and ovarium are joined together, and the most distant organ, the mamma, becomes a strictly accessory structure to the ovario-uterine canal. Another result of this arrangement is, that in the higher animals the sexual system, instead of being dependent on the seasons or on other external circumstances, is self-regulated, and brought into the reproductive condition at frequent and regular intervals." (pp. 186-7.)

We have thus given a brief, but we believe accurate and succinct, outline of the original views contained in this volume. At every page of the work itself, practical deductions are drawn from the physiological doctrines as they are advanced; but we have for the present chiefly confined ourselves to the latter. In a future bibliographical sketch, we shall, with equal care, go over those lectures, which are entirely devoted to practical points; and we are sure that the interest of our readers will not flag while they follow us in our task. We would observe, that we do not pledge ourselves to all and every doctrine promulgated by Dr. Tyler Smith. This would be impossible, considering the magnitude of the subject itself, and the great variety and importance of the topics discussed; but we do most cordially

recommend the work as one absolutely necessary to be studied by every accoucheur. It will, we may add, prove equally interesting and instructive to the student, the general practitioner, and pure obstetrician. It was a bold undertaking to reclaim Parturition for Reflex Physiology; and it has been well performed.

(To be continued.)

ELEMENTS OF ELECTRO-BIOLOGY, or the Voltaic Mechanism of Man, of Electro-pathology, especially of the Nervous System, and of Electro-therapeutics. By ALFRED SMEE, F.R.S. 8vo. Plates. London: 1848.

A WORK on science, the advent of which is heralded by newspaper paragraphs, is naturally regarded with some suspicion by literary men; and the metropolitan, as well as provincial press, but a short time since, announced that ALFRED SMEE, ESQ., F.R.S., was about to publish a book, containing discoveries so novel and so important, that he would at once take rank among the most distinguished of discoverers and philosophers.

The work *has* appeared, and the public expectations will be sadly disappointed; for what does it show? Why, that Mr. Smee is a man of one idea—that he is haunted with a phantom which must sit heavy on his soul! Whether he eat, or sleep, or see, or hear, or feel, or think, he does so through the medium of voltaic currents. According to him, man (who has been called the "prime work of God") is neither more nor less than an animated voltaic battery, and every function is explicable accordingly. Physiologists have expressed their inability to explain some of the more refined phenomena of life; and to many, the phenomena of sight and hearing have been attended with difficulties; but, *hey, presto!* all these vanish before the wand of the great magician, Mr. Alfred Smee.

What are the requisites for the maintenance of organic life? Mr. Smee replies, "a central apparatus supplied with a peculiar fluid, a peripheral apparatus similarly supplied, the whole connected together to form one universal total (!) is the apparatus desired, and such an apparatus we have in a double voltaic battery." (p. 5.) Vision is equally satisfactorily accounted for. "The essential structure of the eye consists in a definite number of distinct poles of the electro-biological batteries; and according as they are influenced by illuminated images, an action would occur in a sort of pattern, *similar to that used by ladies for the designs of worsted work.* At this point, light loses its physical characters, and becomes aisthenic by its determining a voltaic circuit, which acts upon the brain and gives a knowledge of the external world." (p. 18.)

This is simple enough, but the simplicity of Mr. Smee increases as he proceeds. What is memory?—apparently an act very independent of man. "If we take two iron wires and place them in a solution of argento-cyanide of potassium, and direct a voltaic current through them, silver would be reduced at that wire constituting the negative pole. The two wires would be ever afterwards in different electric relations to each other; one would be positive, the other negative; *and thus the effects of memory would be shown, and future actions regulated.*" (p. 31.)!!

We confess that such a startling result is not *quite* clear to our minds; but these quotations show the strange conclusions arrived at by the author, and, in our judgment, the language is not only singularly incorrect, but the reasoning is very bad, and most of the deductions are crude, unphilosophical, and unsupported by facts.

Among other marvels which this book contains, is the result of an experiment performed by Mr. Smee on his celebrated Aphis vastator. "During last summer, I subjected the Aphis vastator to the action of electricity of tension for a long period, and one brood was kept negatively electrified, the other positively; but after some period, when they produced young, I found

on one pole the vastator, at the opposite the bean aphis." (p. 76.) Mr. Smee has a "faint suspicion" that the character of the kinds was modified by the electricity; that the aphides must have had but an uncomfortable time of it in the electricity of tension is likely enough, but we must decline to agree with the author that the characters of the species were altered thereby. Although we do not profess to be better than our neighbours, we have an objection to a fashion very prevalent at the present day, of disseminating doctrines nearly allied to materialism. It was said of the great Lord Thurlow, that when about to make an assertion greatly at variance with truth, he was more than usually profuse in his oaths as to its correctness. In like manner, many writers of the sceptical order make a great parade of their desire to avoid anything like materialism; and thus winning the good opinion of their readers, they instil the poison with more deadly effect. After considering whether a totally different organic being may spring from another organic body made up of cells, and quoting the experiments of Messrs. Cross and Weekes (without stating that they have been shown to be fallacious), Mr. Smee says: "There is amongst those endowed with little minds, an unwise, an unjust, and a false prejudice against those who undertake such investigations. It is assumed that such men are infidels and atheists, and possess every other bad quality to which hard terms have been assigned. Such parents bring up their children to despise investigation; and the finger of scorn is pointed at all who dare consider the subject. On this account, this matter of vital importance has not received the labour and talent it merits. It has already been proved by Schwann and Schneider, that a cell is the basis of all organic bodies; and, if hereafter it shall be discerned that, from modifications in the inherent power of the cell, different organic bodies result, what a sublime view would it present to the human mind! and the fact might justly be held by some future Paley, yet unborn, as the most powerful proof deducible from nature of the infinite power and wisdom of God." (p. 77.) This is all very fine, but we must dissent from the position laid down by Mr. Smee. It is not because people "undertake" the investigations in question that they are regarded as infidels and atheists; but because they jump to conclusions without sufficient proof. It is no small matter to assert that man can create a new creature—that it is permitted him to breathe the breath of life into the smallest atom that exists upon this earth. *Life* is equally the attribute derived directly from the God of Nature, whether it animate a crawling mite, a lordly elephant, or man himself; and if we admit that it can be called into existence by human means in the one case, we see no reason why it may not be called into action on the other. The structure of their bodies is equally marvellous: they differ only in magnitude and diversity of parts.

With these remarks we take our leave of Mr. Smee, regretting that we cannot speak more favourably of a work which, doubtless, cost the author much labour.

CYCLOPÆDIA OF ANATOMY AND PHYSIOLOGY. Parts XXXI, XXXII, XXXIII. Edited by ROBERT TODD, M.D., F.R.S. May, August, and September, 1848.

We congratulate the subscribers to this useful work on the progress it is now making towards completion. '*Festina lentè*' was for some time the motto; but the publication of three parts in twelve months is an earnest of better arrangements. The contents of the three parts extend from "Products (Adventitious)" to "Secretion." Three articles are especially deserving of attention—QUADRUMANA, REN, and RESPIRATION.

QUADRUMANA. Those interested in comparative anatomy will find in this communication a valuable monograph. The results of the recent investigations into the osteology of the orangs are detailed; and nothing has been omitted which could render the article complete.

Ren is from the pen of Dr. George Johnson, and is a careful and elaborate digest of all that is at present known upon the subject of the Kidney, whether as regards its structure or morbid changes. Before proceeding further, we may mention, that in no department of anatomy or pathology, has greater light been thrown by the microscope than on the minute structure of the renal organs; to Mr. W. Bowman are we indebted for the removal of many errors, and the addition of much truly valuable information on these points. The article before us is divided into three parts; the first contains a concise account of the general form and structure of the renal organs in the lower animals. In the second, the anatomy and physiology of the human Kidney is considered, and the third part is devoted to its pathology. The manner in which the anatomy and physiology have been treated of by the author is felicitous, he having compressed into a moderate space the cream of the knowledge that is at present possessed on the subject; to those who have not followed the rapid progress of microscopical science during the last ten years, much of this section will be new. Not less instructive is the succinct account of the pathology of the Kidney; which is discussed, first, as a result of local causes, as retention of urine, irritation from a calculus, or a blow on the loins; and, secondly, as resulting from constitutional causes acting on the Kidney, by inducing an abnormal condition of the blood. The article is one of the ablest that has yet appeared in the Cyclopædia.

Respiration. Everything proceeding from the pen of Professor John Reid is deserving of consideration; and from the ability with which the subjects of former contributions have been treated, we commenced the perusal of the article before us with high expectations. These have not been disappointed. It is a most lucid, careful, and complete *résumé* of everything at present known respecting Respiration. The arrangement is excellent, the subject being treated of under distinct heads, so that the practitioner who has little time to devote to reading, but is anxious to acquire information on a particular point, can refer to it at once, without the necessity of wading through the entire article; from which, however, the grey practitioner as well as the youthful student cannot fail to derive most valuable knowledge.

The subject is judiciously commenced by a consideration of the amount of carbonic acid in the air under various circumstances, and an exposition of the beautiful harmony which exists between the vegetable and animal kingdoms, each supplying to the other that which is needed to support the breath of life, and removing that which, if permitted to accumulate, would be deleterious. The comparative anatomy (if the expression may be used) of Respiration follows, and is an appropriate introduction to the anatomy, physiology, and chemistry of that function in man. The observations of Mr. Hutchinson and Dr. Sibson on the statistics and mechanism of Respiration are carefully analyzed, the circumstances influencing, directly and indirectly, that function explained, and the article concludes with an admirable account of the phenomena attending the oxygenation of the blood, the atmospheric effects resulting, and the changes produced in that fluid by the process.

In this communication Dr. Reid sets a wholesome example to those who are fond of putting forward crude theories of their own, under the mantle of originality, rather than of benefiting their readers by submitting to them the well-digested labours of observers of acknowledged care and reputation. The present is too much the age for novelties, and that which is substantially good is too often put aside in favour of theories which, like bubbles, float in the air for a brief time, and then vanish for ever. Dr. Reid has, with infinite pains, brought together the result of the investigations of the best physiologists, past and present, has reasoned soundly upon them, and produced an article at once gracefully written, and affording the best information on the subject of which it professes to treat.

On Infantile Laryngismus: with Observations on Artificial Feeding, as a frequent cause of this Complaint, and of other Convulsive Diseases of Infants. By James Reid, M.D. Pp. 204. London: 1849.

Since the publication of Dr. James Simpson's inaugural thesis, *De Asthmate Infantili Spasmodico*, in 1761, and of the *Observations on the Asthma and Hooping Cough* of Dr. John Millar, in 1769, great attention has been paid to the subject of Infantile Laryngismus, and various treatises and papers of considerable merit have from time to time appeared, exhibiting the views of their respective authors on the nature and causes of this interesting, yet for some time obscure, affection. In the work of Dr. Reid, now before us, we find, in the course of a clear and instructive account of the History, Symptoms, Causes, Diagnosis, Prognosis, Post-mortem Appearances, and Treatment of Laryngismus Stridulus, an examination, *seriatim*, of most of the principal views which have been maintained, with such remarks on them as have been dictated by the author's experience.

The pages devoted to the History and Symptoms of the Disease appear to us worthy of a careful perusal, although our space does not permit us to give an analysis of them. In speaking of the Causes, he first notices, under the head of "Cerebral Causes," the opinions of Dr. John Clarke and Mr. Pretty, and observes that—

"If careful observation be made, I think it will not be found, in all cases, complicated with cerebral convulsions. Firstly, That there are not present the usual symptoms of congestion of the brain. Secondly, That in the great majority of cases, no unusual pathological appearances in the brain are met with, after a fatal termination from spasm of the glottis. Thirdly, That the remedies most successful in this complaint are not those which are usually employed in cerebral congestion; whilst, on the contrary, those which are there indicated, have frequently been productive of great injury in the treatment of Laryngismus." (p. 39.) Hydrocephalus has been considered, by Drs. Cheyne and others, to be a cause of Laryngismus; but Dr. Reid is "more disposed to agree with Gölis, and those writers who think that Laryngismus, especially when complicated with cerebral convulsions, may act as a *predisposing cause* of hydrocephalus; and thinks it may be fairly inferred, that hydrocephalus, though sometimes a complication, is very rarely a cause of Laryngismus. Neither does he consider there are any strong reasons for believing that an Inflammatory Condition of the Brain, or of its membranes, gives rise to the complaint. The idea of Dr. Hugh Ley, that Laryngismus is essentially a paralysis of the muscles which open the glottis, arising from pressure on the pneumogastric nerve by the pressure of enlarged cervical and bronchial glands, he considers to be disproved both by positive and negative evidence, and thinks that similar arguments will apply to the Enlargement or Diseases of the Thymus Gland, which have been alleged as a cause by Mr. Hood, Drs. Kopp and Hirsch, and others. The conclusions at which the author has arrived, as to the etiology of Infantile Laryngismus, are as follows:

"1. That for the occurrence of this complaint, the cerebro-spinal system is required to be in a peculiarly excitable state, which thus acts as a *predisposing* cause. The period of 'teething' is the most likely one to produce this affection." (This period he considers to commence with the birth of the infant, and not to be limited to the time when the teeth are escaping from the gums; although the liability to the complaint is then increased.)

"2. That during this irritable state of the nervous centres, the two most frequent (and, in the majority of cases, the combined) causes, are '*the improper description of food*' which is administered to the infant, and '*the impure and irritating atmosphere which it breathes.*" (p. 71.) Under the head of "Improper Description of Food," Dr. Reid includes not only artificial diet, but also the *human milk* itself, which, in many cases, from the peculiar constitutional condition of the mother, or wet nurse, is rendered unfit for the

nourishment of the infant. He directs special attention, however, to the influence exercised by "rearing by hand," in causing mortality among children. From the reports of several institutions, he proves that an artificial diet is a most prolific cause of death among infants. A report of the Dublin Foundling Hospital, drawn up in 1797, states that, "during the preceding six years, 12,786 infants were admitted, out of whom 12,651 died, 135 only surviving." Further, "in the Dublin Lying-in Hospital, where the infants *are suckled*, the mortality, during the first fifteen days, is only one in 58½; in the Hospice des Enfans Trouvés, at Paris, where the children are fed by hand for the first nine days, the mortality during that period is one in four.—*Brit. and For. Med. Review*, April 1839." (p. 83.)

The DIAGNOSIS of Laryngismus from Croup, Hydrocephalus, and Hooping Cough, is well pointed out by the author; and the PROGNOSIS is considered to be in every case somewhat uncertain. The POST-MORTEM APPEARANCES he thinks calculated to afford us very little aid in detecting the proximate cause of the complaint, and suggests a more careful examination of the state of the mucous membrane of the intestines.

The TREATMENT which Dr. Reid recommends during the paroxysm is similar to that employed in the asphyxia of newly-born infants, in order to excite the respiratory function. Abstraction of blood is warrantable only in exceptional cases; and emetics are advisable only when the affection supervenes on over-repletion of the stomach. Dr. Reid places considerable reliance on the use of purgatives, combined with mercurials, and with alkalies. The indication is not to produce any severe cathartic effect, but "merely to unload the intestines of the constipated masses generally contained in them, to regulate the secretions, and to remove undue acidity and flatulence." (p. 121.) Antispasmodics are of considerable service in subduing the tendency to the spasmodic paroxysm; and a stimulating embrocation, containing also some narcotic ingredient, applied to the spine, chest, or abdomen, will be followed with benefit in many cases, especially when the limbs are affected by spasmodic contractions. To remove the lingering effects of Laryngismus, tonics are frequently found of great influence, especially the preparations of quinine and iron.

The observations on the DIET of Infants who are predisposed to convulsive affections, commence with some judicious remarks on *Suckling*, on the importance of which too great stress cannot be laid. This practice should be followed in every case, where some disqualifying cause, such as hysterical paroxysms, strong passions, or non-secretion of milk, are liable to produce injurious results. In cases where a wet nurse is required, such an individual should be selected with care, attention being paid to her constitution, diet, and general habits. Dr. Reid recommends that weaning should take place gradually; and, in cases where exclusive feeding by hand is unavoidable, the infant should be fed by *suction*, that being the method by which a child receives its natural aliment. When artificial nourishment is to be given to a child, the author knows of none better "than that composed of two parts of cow's milk" (not boiled) "with one of thin barley-water, or grit gruel, slightly sweetened." (p. 146.)

Attention to the diet of children liable to convulsive diseases must be strict and unremitting. "As a general rule, breast-milk should form their only nutriment, if possible, for the first nine or ten months; and the artificial food which is, after this, given in addition, should be of a consistence not much thicker than the milk itself. Light broths, carefully prepared, may gradually form a portion of the diet table; but solid animal food should not be given before the child has attained its eighteenth month, if the molar teeth have then made their appearance; but in many cases it will be advisable to defer its use till the child is two years old. It certainly must be considered a great error to give animal food to a young infant, before its grinding teeth are ready to masticate properly." (pp. 149-50.)

Change of air has been of great benefit in some instances. In all cases every effort should be made, especially in large towns, to procure as free and pure an atmosphere as possible, attention also being paid to the temperature, which should be equable, varying from 60° to 63°. Out-of-door exercises, in fine weather, is generally beneficial, by allaying irritability.

The last forty-six pages of the book consist of an appendix of twenty-six cases of Infantile Laryngismus, which occurred in Dr. Reid's practice, or the notes of which were furnished to him.

There are one or two points which, perhaps, as critics we ought not to omit to mention. In the first place, although Dr. Reid refers to the era of dentition as pre-eminently the era of Laryngismus, we do not think he has dwelt sufficiently upon the irritation of dentition as the exciting cause of the laryngeal spasm. Dr. Reid partially recognizes the reflex nature of Laryngismus; and dwells especially upon the pneumogastric nerve as the special excitor. Now, we believe the trifacial nerve to be even more important as an excitor of Laryngismus, than the pneumo-gastric or any other nerve whatever. Another point has struck us, namely, that no reference is made to the really splendid essay on Laryngismus, by Dr. Marshall Hall, read before the Medical Society of London, May 17 1847, and subsequently published in the Lancet,—an essay which contains the best account we have met with of the reflex pathology of this disease.

In concluding our notice of this work, we would cordially recommend it to our readers as an excellent treatise on Laryngismus. Dr. Reid has evidently paid much attention to the subject, both by carefully observing the cases which have fallen under his care, and by making himself acquainted with the opinions of others. The results at which he has arrived are embodied in a form which, although there does not appear to be any striking originality in his views, is well calculated to serve as a faithful guide to all who are concerned in the treatment of Infantile Laryngismus.

PRACTICAL REMARKS ON NEAR SIGHT, AGED SIGHT, AND IMPAIRED VISION; WITH OBSERVATIONS ON THE USE OF GLASSES, AND ON ARTIFICIAL LIGHT. By WILLIAM WHITE COOPER, Fellow of the Royal College of Surgeons of England, and Senior Surgeon to the North London Ophthalmic Institution. pp. 216. London: 1847.

MR. WHITE COOPER'S *Practical Remarks* are intended to serve as a guide to a subject with which medical men are expected to be well acquainted, and which is also interesting to the general reader. It is almost surprising that, considering the importance and interest which are attached to an organ in such constant use, and at the same time requiring so great an amount of *hygienic treatment* as the eye, there should be a scarcity of works on the subject in the English language, in the form which Mr. Cooper has adopted.

The work is divided into six Chapters, and an Appendix. The first chapter treats of SIGHT, and the ANATOMY AND PHYSIOLOGY OF THE EYE, and is written in a plain style, without any pretensions to elaborate minuteness, but calculated to impart to the general reader a correct knowledge of the subject.

Chapter II treats of MYOPIA, or Near Sight. The author draws a distinction between myopia arising from imperfection in the form, consistence, or relation of some of the refracting media; and myopia arising from the loss of adjusting power. This distinction between structural and functional myopia is important in a practical point of view, inasmuch as the treatment varies in the two cases. In structural myopia the defect is remedied by concave glasses,—double concaves being better than single. Mr. Cooper very judiciously observes, "It is not only of the highest consequence that near-sighted persons should avoid increasing the power of their spectacles needlessly, but they should carefully avoid wearing them constantly; for, with proper care of the eyes, such as the avoidance of much close application, of reading by the light

of a hot fire, or studying by too brilliant a light, glasses of a low power will answer every useful purpose for a long series of years." (p. 56.) The second form of myopia arises from over-exercise of the eye in pursuits requiring close application, and consists in the loss of the power of adjustment to the focus for distant objects. This affection is very prevalent among students at universities, and especially among the Germans, who are great readers. In such cases "spectacles are absolutely injurious; they afford, it is true, the means of discerning distant objects, but they tend to confirm the disorder, and render the individual dependent upon artificial aid for the remainder of his life. The course which ought to be pursued is plain: the patient should abstain from study, and all pursuits requiring close application, and he should endeavour, by due and well-regulated exercise of the eyes, in the country if possible, to recover that adjusting power of which, by injudicious exertion, he has deprived them." (p. 74.)

Chapter III treats of PRESBYOPIA, or AGED SIGHT. This is one of the earliest indications of advancing age; and its causes may be:—

"1. A flattening of the cornea from a diminution in the bulk, either of the aqueous or vitreous humours, or of both, the result of defective secretion.

"2. An alteration in the consistence, and diminution in the convexity, of the crystalline lens.

"3. Diminished density of the various humours.

"4. Diminished curvature of the retina, which, existing while the vertical diameter of the globe remains about the same, prevents the refracted rays that enter the flattened cornea from forming a picture upon the retina." (p. 77.)

Presbyopia is to be distinguished from *hard lenticular cataract* by the improvement in vision in the latter affection, on dilatation of the pupil, and by the cataract being capable generally of being seen as a greenish, greyish, or amber-coloured haze, of various opacity, in the centre of the pupil; and from *amaurosis*, by the evidence of disturbance of function of the retina,—though the ordinary premonitory symptoms of muscæ volitantes, double vision, headache, &c., may be absent,—and by the sluggish action of the pupil of the affected eye when the other is closed. Presbyopia may also be a congenital or temporary condition, or may succeed or precede myopia, of all which Mr. Cooper relates instances. The remarks on treatment contain some important cautions. It is an erroneous idea to suppose that "preservers" can prevent further changes in the eye, if used in time. By the application of the term "preservers" to glasses of the lowest power, many are induced to use them before they are required, which is highly injurious, by inducing or hastening an indolent state of the eye. The decay of vision depends much on a person's habits as well as constitution. It is hastened by over-exercise of the eyes, especially by candle-light. Indistinct writing and small print should be particularly avoided by those, whose circumstances compel them to study in the evening. Reading by fire-light, or simply gazing at the fire when sitting alone is more or less injurious, and should be avoided; and long exposure to the reflection of a strong light is also hurtful. To preserve weak eyes as much as possible from a strong light, Mr. Cooper thinks neutral tint spectacles exceedingly suitable. He remarks that, in reading and writing, the light should be sufficient, and at the same time grateful and pleasant to the eyes; and this is best obtained by placing the candle or lamp behind the reader, a little to one side. Sudden transitions from gloom to strong light should be avoided. The author concludes the present chapter with impressing on the presbyopic reader the necessity of exercising the utmost precaution in the use of spectacles, and of employing the lowest power that can be of service, and then only when indispensably necessary. The same glasses should not be used by candle-light as by daylight.

Chapter IV contains some useful cautions on the subject of GLASSES. A single eye-glass is highly injurious, as it causes an alteration in the relative strength of the eyes. Those whose occupation compels them to use a magni-

fier, should wear it alternately on each eye; and those who indulge in microscopical or astronomical pursuits, should learn to use either eye indifferently. In recommending glasses, great care is necessary to determine that the patient really requires them, and that such aid is proper; for, in some cases, as in myopia from loss of adjusting power, the use of spectacles would be improper. Recovery from near sight is more frequent among the lower classes, evidently because they seldom use spectacles, but overcome or arrest the defect by exertion of the eye.

On the subject of choosing spectacles, Mr. Cooper gives some useful information. The glasses should be free from specks or veins, and the figure of the lenses accurate; and the lowest power which can aid the sight should be chosen. There is also another point which is too often neglected; viz., the fitting of the spectacle frame, in such a way, that the centre of each glass shall be exactly opposite the pupil of the corresponding eye. The best material for their manufacture is blue steel, which combines the advantages of lightness, elasticity, durability, and neatness of wear. The use of spectacles should be dispensed with for as long as possible after the operation for cataract; and some cases have been recorded of the adjusting power of the eye having been so far restored, as to render them unnecessary.

Chapter V is on ARTIFICIAL LIGHT, and commences with a description of the effects which it produces on the eye, when in excess. The uncomfortable feelings about the eye often experienced by those who have been exposed to the heat and glare of a brilliantly lighted and crowded room, are not unfrequently followed by *Chronic Ophthalmia*. Muscæ volitantes—and, if these be neglected—amaurosis, frequently affect literary men; and also tailors, sempstresses, shoemakers, jewellers, and watchmakers. Some illustrative cases, with remarks on the treatment of these affections, now follow; for which we must refer our readers to the work itself.

Chapter VI is devoted to the consideration of the physical action, and the different kinds of ARTIFICIAL LIGHT. Light is injurious to the eyes, in proportion as the red rays prevail, which produce excitement, followed by debility, of the retina. Other causes of distress are the divergence of the rays, the unsteadiness of the light, or the evolution of carbonic acid gas and aqueous vapour, which tend to impair health. Mr. Cooper next notices the different kinds of artificial light now generally employed; viz., coal-gas, camphine, naphthalized coal-gas (Smee), oil, etc. He prefers wax candles for those who employ their eyes much by night. To remedy the injurious effects of artificial light, arising from its having an excess of red and yellow rays, the light may be surrounded with a shade, coloured blue on the inner side: the blue rays reflected from the shade will produce a tolerably pure and white light by mingling with the reddish yellow rays of the flame. Another mode of improving artificial light is by surrounding the lamp with a glass chimney, tinged with a very pale blue, or by causing the light to pass through a fluid coloured blue. We may mention, that the hints as to tinting lamp-chimneys and glasses blue, has been extensively acted on, and very generally adopted. Some valuable remarks follow on the means of obviating the general pernicious effects of artificial light.

The APPENDIX treats of *Colour Blindness, Effects of the non-luminous rays upon the eye. Mode in which adjustment to distance is performed. Effects of Snow Blindness, and means of obviating them. Experiments of Sir Isaac Newton upon luminous impressions on the retina. Reflections by Milton upon his blindness. Particulars of Galileo's blindness.*

We recommend our readers, medical or general, to peruse this instructive little treatise. The subjects on which it treats are of a nature rendering it desirable that all should be, to some extent, acquainted with them. The hygienic treatment of vision rests mainly with the individual; and much valuable and trustworthy information may be derived from this book by almost every person. At the same time, the medical practitioner will find it a safe guide on a subject of constant importance.

PORTRAITS OF DISEASES OF THE SKIN. By ERASMUS WILSON, F.R.S. Parts I, II, III, IV. Fol. London: 1849.

We had occasion, in a recent number, to express our admiration of the plates by MR. DALRYMPLE on the *Diseases of the Eye*, and it is an agreeable duty to speak in terms not less eulogistic of the illustrations of *Skin Diseases* by MR. ERASMUS WILSON. In one respect, these diseases may be said to resemble ophthalmic affections,—namely, in the nicety which is sometimes required to discriminate between their varieties, and the practice necessary to enable us to treat them with confidence and success. Next to enjoying frequent opportunities of seeing these diseases in all their varieties, such plates as those before us afford invaluable assistance in forming a correct diagnosis. Very recently an officer, who had served much in the tropics, was expressing to us, with great bitterness, the indignation he felt at having been subjected, by the regimental surgeon, to a course of treatment for *itch*, when he was, in fact, suffering from *prickly heat*,—which was aggravated a thousand-fold by the sulphur inunction; and we know of a case where a gentleman, at Oxford, was pronounced by a physician to have a severe attack of *lichen*, when, in fact, his skin was reddened by a scarlet vest, in which he had been rowing a match! Such mistakes as these are never forgotten, and may do a practitioner irreparable damage. Had the medical men in question seen the beautiful plates before us, they would probably not have fallen into the errors they committed. The parts which have already appeared, illustrate the following diseases: Chloasma, Favus, Psoriasis Palmaris, Lupus, Lichen, Melanopathia, Leucopathia, Acne, Erythema, Urticaria, Melanopathia-Syphilitica, Lichen-Syphiliticum, Roseola-Syphilitica, and Lichen-Simplex,—which last is a perfect pictorial marvel.

The utility of this work is equal to its beauty; and it ought to be within reach of every medical man who may be called upon to treat cases of cutaneous disease.

THE HUNTERIAN ORATION, delivered before the Royal College of Surgeons of England, on the 14th of February 1849. By CÆSAR H. HAWKINS, Surgeon to St. George's Hospital. pp. 35. London: 1849.

Each succeeding year increases the difficulty of infusing interest into a discourse devoted to a special subject such as the present, from the complete manner in which the ground has been exhausted by previous orators. The oration before us is deserving of commendation, from the happy combination of Hunterian allusions with remarks on more recent investigations. The author touches lightly, but with effect, on the chief discoveries in chemistry, physiology, and pathology, which have emanated from the labours of modern observers, and shows that many of these had, in reality, been anticipated by the great physiologist, to the commemoration of whom the address is devoted. There are continually coming to light new proofs of the surprising genius of Hunter, and fresh evidence that he was greatly in advance of the age in which he lived. It is only now that many of his doctrines are beginning to be fully appreciated, and the truth of others fully established. As a composition, this oration is highly creditable.

DEPENDENCE OF ANIMAL MOTION ON THE LAW OF GRAVITY. By H. WIGLESWORTH, M.B. Parts I and II. 8vo, pp. 210. London: 1849.

The author states, that he has satisfied his own mind that animal motion is due to one great Law of Gravity. If we might venture on a pun, we should suspect that the gravity of some of his readers may be shaken by certain of his positions; for instance,—"That all motion in muscles is due to the pressure of the atmosphere on the surface of the muscle,—a vacuum having been previously formed within it by the union and condensation of gases"(!) p. 4. We give the author credit for considerable ingenuity in supporting his views; but we fear that he will not succeed in making many converts. To have a *hobby* is the failing of many: to be mastered by it, the misfortune of some.

1. A BRIEF DESCRIPTION OF THE CHARACTERS OF MINERALS, forming a Familiar Introduction to the Science of Mineralogy. By EDWARD J. CHAPMAN. pp. 129. London: 1849.
2. PRACTICAL MINERALOGY, or a Compendium of the Distinguishing Characters of Minerals. By E. J. CHAPMAN. Illustrated with Thirteen Engravings. pp. 192. London: 1849.

Few persons possess greater opportunities for investigating the structure and products of the earth, than the medical officers of the army and navy. Called by the nature of their profession to all quarters of the globe; enjoying, in times of peace, considerable leisure; and inclined, by education, to habits of observation and reflection, it is, perhaps, less matter of surprise than of congratulation, that many of these gentlemen have contributed largely to science. *Ex uno disce omnes*—the name of DR. FALCONER must be familiar to all as the distinguished exponent of the palæontology of the Himalaya Mountains.

The want of a book on Mineralogy, which should combine the qualities of portability with conciseness, and yet convey all the information required to determine, chemically as well as scientifically, the characteristics of these valuable constituents of our globe, has long been felt; we ourselves have experienced it in days of yore, and have therefore the greater satisfaction in inviting attention to the volumes now before us.

The *Brief Description* is intended as an introduction to the *Practical Mineralogy*. It is really *multum in parvo*, and may be regarded as a pocket companion and guide to the traveller who wishes to make himself acquainted with the character of the minerals of the countries he traverses: it furnishes him with every particular required, including the mode of analysis. In the *Practical Mineralogy* the subject is treated of at greater length, and the author has so arranged his matter, that it is compact in form, and easy of reference, for instance—

"*Native Platinum.* Platine Bend. Native Platina Phil. Hexahedral Platina. M. H=4·0—4·5; sp. gr. 16·0—20·0; C. Steel grey, inclining to silver white; ductile and malleable; L. Metallic. It occurs in flat and rounded grains, and in small pebbles. Structure compact, uncleaveable, but the cube is assumed as the P. F. Infusible either alone or with the fluxes. Soluble only in heated nitro-muriatic acid, the solution yielding a yellow precipitate with the muriates of ammonia and potassa, and a dark brown precipitate with hydro-sulphuric acid, which becomes black when dry.

"C.P. Platinum is more or less mixed with small quantities of iron, rhodium, palladium, iridium, osmium, etc.

"P. L. Choco, etc., in South America, the Brazils, St. Domingo, Siberia, in alluvial deposits with native gold, Zucon's magnetic iron, sand, etc." (p. 133.)

Such is the style in which the book is written, and it is illustrated by 270 figures demonstrating the form and cleavage of crystals.

It will be seen that our opinion of these works is highly favourable; and to every one desirous of becoming acquainted with the interesting and useful sciences of Mineralogy and Metallurgy, we can conscientiously recommend them.

A CRITICAL TREATISE ON THE GENERAL PARALYSIS OF THE INSANE. By JAMES WINN, M.D. pp. 50. London: 1849.

This, which originally appeared in the form of a review, in the *Journal of Psychological Medicine*, is a good statement of the principal facts connected with the subject of which it treats; but it does not contain any thing calling for special notice.

CRITICAL DIGEST OF THE BRITISH AND FOREIGN MEDICAL JOURNALS.

ANATOMY AND PHYSIOLOGY.

THE PANCREATIC JUICE: ITS USES IN DIGESTION.

M. Bernard, of Villefranche, who has made some interesting researches on the digestive function, has been led to conclude, that the especial function of the pancreatic juice is to modify or digest the fatty matters contained in the food, and to facilitate their absorption by the chyliferous vessels. He distinguishes two kinds of pancreatic juice: 1, *Normal*; 2, *Morbid*; the latter being secreted in great abundance under inflammatory action. The former is a colourless, limpid, viscous, alkaline fluid, possessing no characteristic odour. Its taste is somewhat saline; and its tactile impression on the tongue is that of a viscous liquid. Like albumen, it is coagulable by heat, nitric, sulphuric, and hydrochloric acids, by metallic salts, wood-spirit, and alcohol. It differs, however, from albumen in this respect; that the precipitate produced by alcohol, when dried, can be readily dissolved in water, and possesses the same properties as before its precipitation; which is not the case with albumen. The morbid pancreatic juice is a watery fluid, having no viscocity, generally colourless, but sometimes opalescent, sometimes reddish. Its taste is saline and nauseous; its reaction is alkaline; and it is not coagulable by heat or acids. The transmutation from one to the other is gradual, and is shown by a progressive diminution of the coagulable material.

On exposure to a temperature of 40° or 45° cent., the pancreatic juice, in a few hours, exhales a nauseous odour, presents a cloudy deposit, and a peculiar aspect, arising from crystals of margarine, and it loses its property of coagulating by heat.

When two parts of fresh healthy pancreatic juice are mixed with one part of olive oil, fresh butter, mutton or pork suet, and exposed in a salt water-bottle to a temperature of 35° or 38° cent., there is soon formed a whitish, creamy emulsion, which is not precipitated at the end of fifteen or eighteen hours. It is evident that some chemical action is exerted in the fat: for at first, the mixture has an alkaline reaction, but becomes acid in five or six hours, evidently from an increase of glycerine and fatty acid. When butter is used, butyric acid can be detected by its odour, at some distance from the vessel. M. Bernard states, that no other animal fluid possesses this property: and it is not possessed by the pancreatic fluid in its morbid state. The function of the pancreatic fluid then seems to be, to render the fatty matters absorbable, by the formation of a white, homogeneous liquid, which is absorbed by the lacteals. The proof of this is, that the fat, which is unchanged in the stomach, becomes, below the orifice of the pancreatic duct, of a totally different character. If the pancreatic duct of a dog be tied, the fat remains unaltered in the small intestine, and the lacteals only contain a limpid chyle, without any admixture of fat. In rabbits, where the pancreatic canal opens at a considerable distance below the biliary duct, the fat contained in the food remains unaltered till it arrives at the orifice of the pancreatic duct, and the lacteals contain no fatty matter above this point. The experiments of Sir B. Brodie were made on cats, in which the pancreatic and biliary ducts open by a common canal, so that he included both in the ligatures which he applied. He was led to conclude, that the bile acted on the fatty matters; but M. Magendie, in tying the *ductus choledochus* of dogs, which is distinct from the pancreatic duct, did not obtain the same result. The apparent contradiction in these experiments is considered by M. Bernard as confirmatory of his views. [*Archiv. Gén. de Méd.* Janvier 1849; *L'Union Médicale*, 13 Fev., 1849.]

ABNORMAL MUSCULAR AND ARTERIAL DISTRIBUTION IN THE LEG.

The following anatomical peculiarity is described in the *Lancet*, of April 21, 1849, by a student of the Andersonian University at Glasgow:—

"This muscle, situated in the posterior region of the leg, arose from the fibula, its central point, by a thin aponeurotic slip, from the deep crural fascia and intermuscular septa, becoming fleshy, and ending in a rounded tendon; it descended behind the internal malleolus to be inserted into the outer edge of the tendon of the flexor digitorum longus, previous to its division, lying in its course between this and the flexor pollicis longus muscles. At the astragalus it crossed the latter, and became continuous with the musculus accessorius.

"In the opposite extremity of the same subject, a similar muscle existed, but different in origin and development. It arose from the lower fourth of the fibula, thick and fleshy, passed obliquely inwards behind, or posterior to the flexor pollicis longus, and received the insertion of the musculus accessorius, as the former.

"This muscle, in the latter situation, has been observed in a few instances by the learned Professor of Anatomy in the above Institution, but usually connected with either the flexor pollicis or the plantar fascia. From its origin, direction, and insertion, it might be appropriately called the musculus accessorius secundus, or longus.

"In the former instance, besides acting as an auxiliary to the long flexor, and correcting the obliquity of its action, taking the insertion as the fixed point, it would make tense the deep crural fascia, and thus give increased power to the muscles beneath it. The relations of the parts were rendered still more important and interesting by the presence of an abnormal distribution of the posterior tibial artery, which passed beneath the above and the flexor pollicis longus muscles, in contact with the interosseous membrane, and descended to the os calcis, curving round it in relation with its inner tubercle, to become the external plantar. The peroneal and internal plantar arteries were wanting. The posterior tibial nerve lay to the inner side of the artery in the latter part of its course, separating it from the flexor tendons."

The Editor of the *Lancet* observes, "The above communication was accompanied by a drawing, which we have not thought it necessary to publish, as the writer has so well described the irregular distribution in question. Instead of considering the abnormal fasciculus as a high origin of the musculus accessorius, we, under the belief that the flexor longus and musculus accessorius are one muscle, are inclined to regard it as a fibular and fascial origin of the flexor longus digitorum. The fibular course of the posterior tibial artery is not very uncommon; but it serves to illustrate the fact, that aberrations of anatomical structure, when they do occur, have a tendency to be multiple."

PRACTICE OF MEDICINE AND PATHOLOGY.

STEATOSIS, OR ADIPIFICATION OF MUSCLE.

In the *Edinburgh Medical and Surgical Journal* for April 1849, Mr. Hallett relates a case of Steatosis, which he witnessed in the dissecting room of the University of Edinburgh, in the session 1846-47, and adds some remarks on the nature and general characters of the transformation.

William Speed, æt. 78, died of paralysis, on the 8th of December 1846. His body was removed to the University for dissection: it presented the appearance of having belonged to a strong robust man. On examination, the muscles, with but few exceptions, were found to have undergone fatty degeneration. Some had been apparently entirely transformed into adipose tissue, among which were all the muscles of the back, face, and scalp, with the single exception of the *latissimus dorsi*, which was only partially changed.

Others had been partially transformed, many of these having three-fourths or more of their muscular appearance destroyed; the remaining portion, though wearing a fleshy aspect, presented very evident indications of the process of adipification having been in full force, up to the time of death. A few of the muscles retained more of their normal appearance, a small portion only having been converted into fat; or the adipose matter having been equally and more sparingly distributed throughout the muscle, so as to give it a mottled aspect. The heart also, besides having its surface loaded with more fat than ordinary, had its substance loaded with fatty matters to near the inner surface of its several cavities.

Mr. Hallett cites examples of the fatty degeneration of muscle from Dumas, Vicq d'Azyr, Maugre, Cruveilhier, Louis, and Emmanuel; and states that other cases have been seen and mentioned by Salzmann, Leuwenhoeck, Albinus, Haller, and many other anatomists.

It would appear that fatty transformation is strictly confined to the striated muscular fibres, including the voluntary muscles and the heart. In the latter organ the fat is deposited towards the surface, the inner fibres and the *columnæ carneæ* being free from it. The lower animals are not free from this morbid state; it has been observed in sheep. In monsters by excess, Mr. Hallett has never observed it; but in cases of monstrosity by defect he has found the muscles replaced by fat, without being able to assure himself that muscular fibres had ever existed in the situations thus occupied.

Adipification of muscle is the result of diseases, which prevent the due exercise, and consequently interfere with or pervert the nutrition, of the muscles. Among these are paralysis, either from disease of the nervous centres, or from injury to the trunk of a nerve, rachitis in its more aggravated form, club-foot, unreduced dislocation, and, occasionally, according to Cruveilhier, old ulcers.

With regard to the minute anatomy of the diseased structure, Mr. Hallett says he has been able to determine that the fat is first deposited within the sarcolemma, where it is found in minute globules, closely packed together, and arranged for the most part in linear series. In this stage of the process there may also be occasionally seen a few perfect fat corpuscles, enclosed within the sarcolemma, filling up its entire breadth, and sometimes causing it to bulge outwards. Whether the fat globules are contained within the myoline, or whether they merely displace it, the author of the paper says he has not been able to determine. He thinks it certain, that there is no appreciable diminution in the amount of myoline, as he has been able to dissolve out the fat by sulphuric ether, the ultimate fibril retaining its normal appearance.

In a more advanced stage, the adipose corpuscles and globules have greatly increased in number within the sarcolemma; and if the fibre be treated with ether, they will almost entirely disappear, and but few of the corpuscles characteristic of muscle will be found where the fatty matters were most abundant. They have for the most part disappeared, or, more likely, have entirely changed their character. In this stage of degeneration, adipose matter can be detected, sparingly distributed in the areolar tissue connecting the fibres. When the muscle is apparently wholly converted into fat, myoline, though in very small quantity, can still be detected by the microscope. It is not uncommon to find the sarcolemma ruptured, and one or more fat corpuscles proceeding from it, evidently not from the manipulation necessary for preparing the fibre for examination, but from a diminution of the elasticity and power of coherence of the sarcolemma, consequent on the deposition of fat within and around it. The only other change worth noticing was observed to be a greater relative amount of fat globules around the fasciculi of fibres, probably from a breaking up of the sarcolemma, at least to a great extent. The appearance of fatty muscle has been described by Vicq d'Azyr and Cruveilhier; the former of whom states emphatically, that it is not between the fibres that the fatty matters are deposited, but within the elements of the fibres themselves.

Analogy would lead us to suppose—though the point cannot be determined in a satisfactory manner—that the fatty matter is deposited within the cells of the myoline, and these become fat cells. In the liver and kidney, the fat is first deposited in the secreting cells; and this, taken in connexion with the disappearance of myoline in proportion to the increase of fat within the sarcolemma, would tend to support such an hypothesis.

The transformation of muscle into fat takes place slowly; and commences at the external part, both in the long muscles of the extremities, and in the flat muscles, as of the anterior abdominal walls. The deposition of adipose tissue appears to proceed *pari passu* with the removal of myoline, so that no difference in size can be detected; this has been distinctly mentioned by several, as Vicq d'Azyr and Cruveilhier. The muscles which have undergone this change are either of a dirty clay or a lemon colour; those in young subjects being of a much deeper yellow hue. They offer considerable resistance to the scalpel, in dividing them, as much as when in their normal state.

Chemical analysis shews the presence of fat. This has been determined by Cruveilhier; and Mr. Hallett examined a portion of the *pectoralis major*, weighing one ounce avoirdupois, which yielded only two scruples of substance not fatty; and only forty-six grains of residue were obtained from a similar portion of the *rectus femoris* (free from tendon), the rest being fat. Gluge reports that he has obtained salts from fatty muscles in rachitic subjects.

Two conditions of muscle are liable to be confounded with fatty degeneration. The first is not unfrequently found in old decrepit individuals, and consists in the deposition of fat in the areolar tissue connecting the fibres of the muscles. The second is seen both in young and old subjects, especially in the lower part of the trapezius and the deltoid muscles; and consists in the loss of the usual fleshy appearance of the muscles, the fibrillæ being also smaller and paler, but still preserving their elemental structure unchanged.

Mr. Hallett does not seem to have been aware of the valuable remarks on fatty degeneration contained in the LECTURES on NUTRITION, HYPERTROPHY, and ATROPHY, delivered by Mr. PAGET, in the Royal College of Surgeons, in 1847, and published in the *Medical Gazette* for that year. Mr. Paget considers, that fatty transformation of muscle is a process of degeneration, and that it is accompanied by a proportionate disappearance of the nuclei, which he believes to be important agents in the process of healthy organization. In Lecture V, he says, "Fatty matter is probably one of the products of the spontaneous transformation of tissues at the end of their vigorous existence; and this form of atrophy only represents the state of a tissue remaining unrepaired, after it has fallen into the ordinary course of degeneration. The possibility of fatty matter being formed in the transformation of protein compounds, is certain from the observations of WURTZ, that butyric acid is one of the compounds formed by the decomposition of fibrine in the open air. And that the fat, which we find in the muscles and gland-cells is really not a deposit put into them from without, but one of the products of the change of their own contents, is made probable by the frequency with which, in muscular fibres, we find the fat particles arranged in the same way as the proper constituents of the fibril; sometimes in transverse, sometimes in longitudinal rows. Indeed, one is constantly tempted, in the examination of these specimens, to think that we can trace all the transitions from the "sarcous elements" of the muscular fibril, and the granules of the gland-cell, to the little oily particles, which, by clustering, and then fusing with others, at length make the great oil-globules which fill the cell. What we see in the degenerating normal tissues, is fully confirmed by the corresponding changes taking place in anormal products, of which Rokitansky adduces eleven classes of instances, in which protein compounds are replaced by fatty matter in such conditions, that it is hardly possible to assume anything, but that the

fat is one of the products of spontaneous transformation of the higher compound."

In Lecture VI, Mr. Paget says, that the whole muscle may appear pale, bleached, or of some yellowish or tawny hue, soft, and easily torn. But a more frequent appearance in the voluntary muscles, is alternation of healthy and diseased tissue. Of the degenerated tissue, some may present, in place of transverse striæ, minute dark dots in transverse lines; some, oil-globules on the interior of the sarcolemma; in others, these are more and more abundant, to the proportionally greater exclusion of the proper constituents of the fibres. He observes, that it is not unfrequent to find a portion of the lower and posterior part of the *recti abdominales* in a state of fatty degeneration.

EDINBURGH FEVER OF 1843-44.

Dr. Cormack has reprinted from the *Medical Gazette*, of April 13th, 1849, the following communication, for the purpose of being added to his work on the Fever. The most important point in the paper is the declaration in favour of typhus being truly an exanthematous disease, and therefore quite distinct from the Edinburgh Fever of 1843-4.

"Having long had nearly ready for the press a considerable supplement to my Monograph on the Epidemic Fever which prevailed in Edinburgh in 1843-4, I have hitherto refrained from obtruding the following remarks upon the readers of the *Medical Gazette;* but having resolved, from the incompleteness of some of my materials, to delay, and alter the plan of, my appendix, I now desire to make a short personal statement on one or two important points, regarding which I am unwilling any longer to be misunderstood.

"In making this communication, it is not necessary to criticise the opinions or impugn the statements of any one. I desire simply to place my own views in a correct light, and to re-assert and vindicate that claim to scrupulous accuracy as to facts, which was set forth in my introductory chapter. 'The main object,' I there said, 'in what follows, is to present a faithful account of the natural history and pathology of the prevailing epidemic, along with such details of the treatment followed, as appear to be of practical importance. Every fact stated is put forth almost in the very words in which it was noted down at the moment of observation;—a practice which ought to be considered imperative on all who venture to lay the result of their experience before the profession. It cannot be denied, that great hindrance has accrued to the improvement of the science of medicine, from physicians describing the phenomena of disease, and the supposed effects of remedies, from general impressions remaining in their minds after the lapse of hours, days, weeks, or even longer intervals,—in place of founding their statements upon an analysis of facts committed to paper at the very time they were being observed, at the bedside of the living patient, or at the dissection of the dead.' (p. 1-2.[1]) Lest the reader of Dr. Wardell's papers should be impressed with the idea, that I did not observe and record the phenomena of the Epidemic Fever in the way to which I lay claim, I beg to state that I scrupulously followed out the laborious method recommended in the above extract.

"The only two points to which I now wish to call attention, are my remarks on the *State of the Blood*, and on the question as to the *rosy elliptical Eruption* (of typhus) being '*always*,' or '*almost always*,' absent.

"I. State of the Blood. In the course of my observations on this subject, I say—'Professor Allen Thomson had the goodness to lend me his able assistance, in examining the blood of a number of my patients by means of the microscope. A few drops were taken from the thumbs, on the same day (24th Oct.), of about a dozen persons, some of them in the pyrexial, and

[1] Natural History, Pathology, and Treatment of the Epidemic Fever at present prevailing Edinburgh and other towns. Churchill, London: 1843.

others in the apyrexial stage of the disorder; and it was found, that in all of them, there was an unusual number of pus-globules; and in some cases, in addition to this, all the globules were found serrated and notched. One gentleman, present upon this occasion, was observed to have his blood exactly in the same state as the fever patients, and within two days he was seized, and went through two mild attacks, or to use conversational phraseology—*the fever, and the relapse.* The blood of some other healthy persons was also examined at the same time: it exhibited nothing unnatural, and none of these latter individuals have taken the fever, although a month has now elapsed since the observation was made."—*Cormack*, p. 113-114.

"Dr. Wardell, in speaking of the blood, thus comments on the above statement:—

"On being drawn from the veins, it was of a less formative consistence than natural, and Dr. Cormack says that the 'crassamentum was a spongy mass, instead of a firm fibrinous clot.' That author also says that the microscope revealed lesion, as evinced by the presence of pus-globules, and in addition, that the globules were found serrated and notched. From inquiries made personally of Professor Allen Thomson, who instituted the researches, it appears that there must have been some misunderstanding on the part of Dr. Cormack, as the former did not corroborate the statement which is made by the latter in his work. Pus-globules certainly did not exist in the blood. In order to be fully satisfied on this point, I procured the blood of a number of patients in different stages of the disease, which my friend and late teacher Dr. Hughes Bennett (whose histological acquirements, especially with regard to morbid anatomy, are well known to the profession), had the kindness to carefully examine, and this gentleman assured me that no pus-globules existed, nor yet the serrated and notched appearance as reported to have been observed by Professor Allen Thomson."—Wardell. (Reprint from *Med. Gaz.* pp. 83-84).

"There was no 'misunderstanding' on my part. I have now before me the original notes, drawn up by Dr. Allen Thomson and myself, of the observations made on the 24th of October, 1843, which were intended to be the commencement of a series, which, unfortunately, we found it impossible to continue. These notes were made at the time of observation, with the blood still under the microscope, and are illustrated by numerous sketches by Dr. Allen Thomson of the notched and serrated blood-globules. The following is an exact transcript of a portion of our original minute, in the handwriting of Dr. Allen Thomson:—'24th October, 1843. Observations made on the blood. 1. *James Laing.* Blood contains a large quantity of colourless globules, of two sizes: one set slightly larger than the blood-globules; the other fewer in number, and exactly similar to the globules described as pus-globules. 2. *Rose.* Globules very much broken up, and ragged on the edges; very few colourless globules; a *few* of the largest size," etc., etc. In the other ten cases, we have noted similar appearances almost in the same words.

"I do not wish to attach much value to the above observations of one day, as illustrating the state of the blood in an epidemic which lasted for many months. I merely protest against these observations, which were carefully made, and as faithfully recorded, being described as a 'misunderstanding'—upon the faith of Dr. Wardell's reminiscences of a conversation with Dr. Allen Thomson, and on Dr. Hughes Bennett's microscopic observations, made, I have no doubt, with skill and accuracy, but *made at a different time, on the blood of other persons*, labouring, I believe, under *another kind of fever.*

"When the objects were being looked at, I remember Dr. Thomson stating, that he was always distrustful of microscopic observations made on the blood corpuscles; and more especially as to the jagged appearance of their margin, as he thought he had seen a great variety in the phases of that appearance, according to differences in the mode of observation, such as the way in which

the blood was spread on the glass, the time it was allowed to remain there, the degree of drying before it was covered, and the state of cleanness of the glass plates. It was, therefore, with these sources of fallacy present to my mind, that I avoided generalizing, and strictly confined my statement to what had been actually seen in the blood of twelve persons, on the 24th of October, 1843. It must be admitted, however, that in so far as a limited number of observations are to be trusted (and with the reservations implied above), there is reason to believe that we saw, in the blood examined, an abnormal degree of the ragged margin, as well as a greater number of the corpuscles called pus-globules. It is, not, however, because I attach importance to these microscopic observations, that I have said so much upon the subject, but because I feel that whatever faults may be charged against my work, it has the merit of being as faithful a record of my experience of the fever, up to the date of its publication in December 1843, as could have been produced. No one could have been more pains-taking; for every case was written with my own hand, or to my dictation, at the bed-side, and in the anatomical theatre, by my accomplished assistants, Dr. Heude and Mr. John W. Reid.

"II. THE ERUPTION. At page 84, in summing up the distinctive characters of the disease, I say—'*The rosy elliptical eruption is absent in almost every case in the present epidemic.*' Had my work been published at the close of the epidemic, or even some months later[1], the word 'almost' would have been deleted from the above sentence. I had then become quite satisfied that the doctrine first promulgated by Professor Henderson, in his clinical lectures[2], and soon generally adopted in Edinburgh, was correct—viz., that the eruption characteristic of typhus had never occurred in the "relapsing" epidemic of 1843-44; and that the two fevers were the products of different morbid poisons. This fact became very strikingly manifest towards the close of the epidemic to which my monograph refers, when the ordinary Edinburgh typhus began to rage. We had our convalescents from the expiring epidemic of the relapsing fever frequently seized with the exanthematous typhus then setting in; till such time as typhus cases were kept apart from those recovering from the relapsing fever. I have notes of nineteen patients who went through unequivocal attacks of both fevers; and other physicians, I know, kept records of a much greater number of similar instances. I forbear at present enlarging upon this question, as it is enough to say, that the evidence was so palpable and overwhelming, that (upon the unanimous representation of the physicians) the managers of the infirmary and fever hospitals framed rules to save those convalescent from the first epidemic from the exposure to the contagion of the incipient typhus epidemic. I believe the care with which these rules were framed, and the zeal with which they were enforced, saved many lives.[3]

"In speaking of my views regarding the eruption, Dr. Wardell seems (I believe without intending it) to accuse me of dogmatism. 'Dr. Cormack,' says he, 'comes, and rather sweepingly, to the conclusion, that the elliptical spots were observed in epidemic cases, although he is enabled to indicate but one individual,' etc. I erred, as I soon discovered, and have now admitted, as to the case referred to; but when I proclaim this error, and unreservedly give in my adhesion to Dr. Henderson's doctrine, I must, in justice to myself, be allowed to extract the following paragraph, as it shows, that from the very first, I contemplated the chance of having to alter or modify my opinion:—

'If some think,' said I, 'that on this point there has been exhibited an

[1] My work was published on the 20th December 1843.

[2] Afterwards in the Edin. Med. and Surg. Journal for January 1844.

[3] "Typhus" and "Typhoid" are often used by authors as synonymous terms; but it is best to adopt the latter only as descriptive of symptoms common to many fevers, and to employ the former exclusively as the name of the exanthematous (or true) typhus; which, like the other exanthemata, almost never affects the same individual more than once.

undue reluctance to enter fully upon an important pathological inquiry, I beg to remind them, that data are yet wanting to entitle us to discuss it fairly, and with profit. This may be attempted in a subsequent publication, at the close of the epidemic; in the mean time let the remark of Rousseau be remembered, 'that the truth is in the facts, and not in the mind which observes them'; and it is hoped that some important facts have been even here communicated as contributions to this part of the pathology of the fever.' (*Op. cit.* p. 107.)

"Though I have much to add to, I am anxious to announce that I have little to alter in my description of the epidemic of 1843-44.

"It was thus that I summed up:—

"THE POSITIVE AND NEGATIVE CHARACTERS OF THE DISEASE.

'The present epidemic possesses positive and negative characters, strikingly distinguishing it from the fever which generally prevails in Edinburgh, viz.,

'1. The sudden and violent invasion of the disease.

'2. Bronzing, leadening, or purpling of the countenance before and after seizure.

'3. The almost uniform occurrence of one or more relapses.

'4. The unusual number of cases with yellow skin, black vomit, and hæmorrhage.

'5. The short duration of the pyrexial state, and its mode of termination.

'6. The severe muscular and articular pain.

'7. The rosy, elliptical eruption resembling measles is absent in *almost* every case in the present epidemic.

'Whilst these are the principal characters which distinguish the two epidemics, they also exhibit other marked differences: for instance, in that which now prevails—

'8. Severe vomiting is much more common; as are likewise gastric, gastro-hepatic, gastro-splenic, and gastro-enteric symptoms.' (*Op. cit.* p. 84.)

"The amendment which I have to make on the above summary, is simply the deletion of the word 'almost,' in the seventh paragraph; but it is so important and essential a correction, that it has seemed proper to make it thus publicly."

SURGERY.

LUMINOUS SPECTRA EXCITED BY PRESSURE—DIAGNOSTIC OF AFFECTIONS OF THE RETINA.

THE April number of the *Edinburgh Medical and Surgical Journal* contains an article, by Dr. WALLER, on the Luminous Spectra excited by Pressure on the Retina, and their Application to the Diagnosis of the Affections of the Retina and its Appendages. He considers them as produced by, 1st, Temporary pressure on certain parts of the eyeball; 2nd, Sudden rotation of the eyes; 3rd, Sudden rotation of the head; 4th, The effect of straining; 5th, Continued pressure of the brain when divested of the cranium; 6th, Compression on the head; 7th, Voltaic and tension electricity; 8th, Pathological conditions of the retina, optic nerve, and brain, idiopathic or sympathetic. In the present article, the four first causes only are treated of. The effect of pressure on the globe, produced by introducing the finger between it and the orbit, is to give rise to spectra varying in brightness according to the point to which pressure is applied, the brightest appearances being caused by pressure on the upper segment. The spectra of the upper and lower segments consist of several concentric rings alternately dark and bright; Dr. Waller has never been able to detect the variegated or iriate colours mentioned by Newton; the spectra appear more vivid in the dark than by daylight, and their brightness is further increased by remaining in the dark some time. The images always appear at a point diametrically opposite to the point com-

pressed. Sir D. Brewster states that these luminous circles continue as long as pressure is applied, but Dr. Waller has found their duration in the dark to be that given by Newton, viz., about the space of a second. Dr. Waller agrees with Muller, that by means of the luminous spectra excited by pressure, we may demonstrate the simultaneous action of the homologous points of the two retinæ.

In the dark, sudden lateral movements of the eyes give rise to two bright circular rings enclosing a dark area, equally bright in both eyes, and appearing nearly in the centre of the field of vision. When the same movements are made in open day with the lids shut, Dr. Waller perceives two circles differing slightly from each other; that on the left being a circle of faint light, brighter at the circumference, and becoming gradually more dim towards the centre. The circle on the right is bright at the borders, and of a dark bluish colour within, which speedily clears away. (*Abridged from Edin. Med. and Surg. Journal, April* 1849.)

The practical deduction drawn by Dr. Waller is, that material assistance may be derived from these phenomena in the diagnosis of obscure cases of disease of the eye, where it is difficult to determine whether the seat of disease is the retina or not. We have for some time past been in the habit of applying the test, and fully agree with the author of this paper, that it is occasionally of much value. So far as our observation goes, the faintness or absence of the spectre produced by pressure, is a fair test of the condition of the retina; for in amaurosis which has made some progress, they are very faint; in complete amaurosis, they cannot be excited. Whereas, if the lens be the seat of disease, and the retina sound, they can always be produced. We may, however, give a caution; namely, that experiments of this sort, and that of holding a candle before the eye to observe the reflected images, should not be used if there be symptoms of congestion or inflammation of the choroid or retina; we have seen such cases decidedly aggravated by rough usage of this description.

REMARKABLE DISEASE OF THE SCROTUM.

Mr. Canton lately related the following case at a meeting of the Westminster Medical Society:—A gentleman, aged 45, who had always resided in a warm climate, was for several years afflicted with a swelling in the left side of the scrotum, which had gradually attained the size of a small melon. The tumour was oval, extending to the external abdominal ring, and the spermatic cord was obscurely felt behind; the testicle was nowhere to be distinguished; the surface was uniform, and the scrotum natural and unadherent; and the diagnosis was otherwise obscure. A small portion at the anterior surface was found to be soft and elastic. The case was considered to be one of long-standing hydrocele, with the tunica vaginalis considerably thickened; and a trochar was consequently passed into the tunic, through the fore-part of the tumour, at its least-resisting part. There flowed at once through the canula a thick, unctuous, brown fluid, which was found to coagulate by heat. The size of the tumour remained the same as before the operation. A few days afterwards, a considerable amount of lighter-coloured fluid was drawn off; and, at the next visit, it was determined to lay open the sac, and endeavour to promote granulation by filling up its cavity with lint. An incision was made, extending from the upper to the lower part, through the cyst, the walls of which were nearly an inch in thickness; the testicle was now seen within, situated lower down than in ordinary hydroceles, and appeared to be in every respect healthy. The patient suffered much from nausea, sickness, and constitutional irritation. At the expiration of a few days, these symptoms having abated, and the interior of the sac being found in a sloughy state, it was deemed advisable to remove, by the knife, the whole of the disease. Mr.

Canton, therefore, carefully dissected the cyst,—which was almost as consistent as cartilage,—from the fore-part of the spermatic cord, and from around the testicle, so as to leave the latter, which was perfectly healthy, unencumbered, and suspended by the former. No part of the scrotum was removed; and, at the close of the operation, the line of incision made in it was so shortened, that the testicle could scarcely be returned to its place through the wound. Healing progressed favourably; and the patient has since remained perfectly free from any inconvenience. [*Lancet*, March 31, 1849.]

OBSTETRICS.

THE CLIMACTERIC DISEASE IN WOMEN: A CEREBRAL DISORDER NOT HITHERTO DESCRIBED.

Dr. Corfe, of the Middlesex Hospital, gives, in the *Medical Times*, April 7th, 1849, some account of a cerebral affection attending the decline of the catamenia and other disordered conditions of menstruation, attended by many of the symptoms of epilepsy, but in a less exaggerated form than exists in this disease. He refers this disorder to uterine disturbance; and gives a variety of facts respecting the paroxysm, and the condition of the skin, liver, kidneys, and brain, which obtains during the attacks. He insists greatly on the importance of distinguishing between this affection and diseases of the brain. The treatment recommended by Dr. Corfe, consists chiefly of cholagogue purgatives and antacids. When he wrote this paper, Dr. Corfe considered he was describing a peculiar and important cerebral affection for the first time.

The *Medical Times* of April 21st, 1849, contains, however, a communication from Dr. Tyler Smith, preferring a claim to the prior description of the same disease, in the Appendix to his work on Obstetrics. The following is Dr. Smith's account of the malady:—

"Peculiar Malady Incident to the Decline of the Catamenia. There is a peculiar malady which has never been described, belonging to the period of 'the change of life', or the catamenial crisis, and allied in its nature to sphagiasmus (compression of the veins of the neck), which I shall take some future opportunity of elucidating fully. The so-called 'heats and chills' of this period consist of a mal paroxysmal affection, allied in its nature both to intermittent fever and epilepsy, particularly to the cerebral variety of the latter; sometimes it terminates in epilepsy, or mania, or even apoplexy. In fact, this malady is a fruitful source of mania, occurring in the female after the decline of the catamenia. The disorder I refer to, appears to consist of compression of the veins of the neck, and distention of the cerebral circulation, attended by vivid sensations of heat, flushing of the face and neck, with giddiness, almost amounting to insensibility. These symptoms are soon followed by relaxation of the neck, great coldness or chills, and faintness, with perspiration over the whole surface of the body. The paroxysms are sometimes so violent as to wake patients out of their sleep, and the apprehension of the attack produces the greatest uneasiness in excitable patients. These paroxysms occur many times in the twenty-four hours, in women of delicate health, at this epoch. Let any practitioner inquire and analyse the symptoms of women at the catamenial decline, and he will find the affection, of which I have given the outline, to be very common; it is a most important subject of study, as being the basis of many of the disorders of the nervous system, which occur after the cessation of the catamenia."

It is not a little curious, that before the appearance of Dr. Corfe's paper, we had made arrangements with Dr. Tyler Smith for a paper on this subject, in which the so-called climacteric disease should be traced fully in all its relations. This communication we hope shortly to lay before our readers.

REPORTS OF SOCIETIES AND ACADEMIES.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

Eighth Meeting of Session 1848-49. March 13.

Dr. Addison, President, in the Chair.

Case of Apoplexy of the Cerebellum. By R. Dunn, Esq. The patient was a man, 52 years of age, whose sight had for some years been much impaired, from an amaurotic affection. The author was first called to attend him in June 1843, when he was suffering from cephaloma and febrile disturbance. This attack left his sight more impaired. About two years ago, he became unfortunate in business, and from that time his mind was weak and excitable. On the last day of April 1848, he was seized during the night with sickness and faintness, and, getting out of bed, fell, as it was thought, in a fainting fit. The author found him in a low, exhausted state, and cold, but complaining of pain, heat, and uneasiness in the back part of his head. The latter symptoms continued for some days. There was no paralysis, but his mind was weaker, and more confused than before, and his emotional excitability increased. Early in May, his wife mentioned that he had become subject to a constant desire for sexual intercourse; that his conduct in this respect was very different from what it had been before his late attack. By the advice of the author, he left home for about three weeks, without his wife. On his return, the desire of sexual intercourse was abated, and from this time was gradually lost. There was now observed an unsteadiness of gait, which increased, and for some time before his death was attended by weakness and stiffness of the left leg and foot. On the 6th of September, he was seized with an apoplectic attack, and died in less than four hours. After death, the vessels on the surface of the brain were found turgid. The convolutions of the brain were shrunken, deficient in firmness, and of a dingy-yellow colour. The optic nerves, shrunken and of a dingy colour, were, together with the substance of the brain around them, in the cerebral part of their course, softened. The whole region of the meso-cephalon had an unhealthy aspect. The interior of the right hemisphere of the cerebellum was a softened, pulpy mass, in the midst of which was an apoplectic clot, of the size of a pullet's egg. The softening extended inwardly, beyond the centre of the median lobe, implicating the fibrous strands of the middle and inferior planes: and outwardly, to near the surface of the hemisphere. The whole arterial system of the brain presented the diseased condition, which results from cartilaginous and osseous deposit between the coats of the vessels. This state was remarkably apparent in the vertebral arteries, especially in the cerebellar branch, from which the hæmorrhage appeared to have taken place. The author regards the state of the vessels as the primary cause of disease. He believes that the first attack in April was of the same nature as the fatal seizure. Around the first apoplectic clot, inflammation, he thinks, was set up in the cerebellum, and this terminated in disorganization. To the inflammatory state of the cerebellum he refers the exaltation of the sexual propensity; to the state of disorganization, the depression of that feeling, and the disturbance of the powers of locomotion—namely the tottering gait, from defective power of co-ordination, ending in a weak and stiffened condition of the left leg. He argued that the medium lobe of the cerebellum is the sensory ganglion of the sexual instinct, and belongs to the same category with the optic, olfactory, and auditory ganglia; while he thinks the two cases he has noticed, afford pathological proof that another office of the cerebellum is that of a regulator and co-ordinator of the muscular actions, especially of those subservient to locomotion, and to the maintenance of the equilibrium of the body.

Professor Owen regarded the sexual sense, as it had been termed, to be an exaltation of ordinary sensibility, and to require a special centre no more than ordinary titillation of nervous extremities in other parts of the body; in proportion to the general exaltation of the sensory system, would doubtless be the enjoyment of the sexual sense. With regard to the inference drawn from the signs of inflammation and disorganization of the cerebellum, in their relation as the cause of the excessive proneness to venery, he thought much caution and reserve were called for, before assuming such relation. The sexual phenomena, to which the author's attention had been specially directed, might be the result of the morbid state of the cerebellum reacting on some other part of the nervous centres, more directly connected with the source of the sensations of the sexual system.

Dr. Marshall Hall. I quite agree with Professor Owen that there is no sufficient reason for supposing that the cerebellum is the seat of the sexual passion. The exasperation of this passion in the case before us, is little to the purpose. There was vomiting and faintness. Is the cerebellum the seat of the functions to which these affections respectively belong? The medium lobe of the cerebellum cannot be affected without the contiguous medulla oblongata being affected too, by irritation or pressure. Which of these, then, was the organic seat of the sexual passion used to excess in the case before us? By the experiments of Segalas, we learn positively that the medulla oblongata is a seat of sexual excitement, for irritation of this part of the nervous centres led to erection and emission. Even in the human subject, sexual phenomena have been observed in cases of injury to the neck, consequently below the seat of the cerebellum. The phenomena of strangulation, in its fatal, and in its slighter degree, afford evidence of the same kind: in the former case there are erection and emission; the latter has been used by the profligate sensualist to induce sexual excitement. The question is a complicated one.

Dr. Carpenter expressed a strong sense of the physiological importance of such communications as that of Mr. Dunn, and addressed himself to some of the remarks made by Mr. Owen, who had not, as it seemed to him, correctly apprehended Mr. Dunn's views. Although he had always been strongly opposed to the doctrine, that the cerebellum, as a whole, is the organ of the sexual instinct or propensity, yet he thought that much evidence had been adduced, tending to show the presence of a ganglionic centre for the sexual sensations, either in the central lobe of the cerebellum, or in the upper part of the medulla oblongata; and the limits of these parts were not so accurately defined, as to make the allocation of it in one or the other a matter of much consequence. He considered that the case recorded by Mr. Dunn added weight to this view. He could not admit the validity of Professor Owen's argument, that the presence of the results of inflammation negatived the idea of the connexion of the lesion, in its earlier stage, with the affection of the sexual feelings described by Mr. Dunn.

Mr. W. F. Barlow thought the case of Mr. Dunn very doubtful as to the light it threw on the much disputed and most unsettled point of the functions of the cerebellum, but very valuable as a contribution to the history of apoplexy, from the care with which the symptoms were observed, the length of time occupied by their observation, and the clear account given of the post-mortem appearances. As to the cerebellum being the organ of sexual passion, Mr. Barlow would take leave to remind the Society of the remarkable case detailed by Cruveilhier, of a female who was sexually excited to a high degree, but was found after death to be deficient in that part. That it was possible for coitus to be effected without the aid of either brain or cerebellum, would appear from what happened in paraplegia.

Mr. Streeter had listened with pleasure and attention to the remarks of Professor Owen, because he well knew the profoundness of his inquiries, and the rare and extensive opportunities which fell to his lot; but he must

say, that in his judgment, the Professor had confounded things essentially different in their nature. He had sought for a relation of size between the cerebellum and the copulative and breeding organs, which does not exist in nature; and, assuming this relation of size to be a phrenological datum, he builds his adverse reasoning upon it. Experimental physiology had shown, that injury or removal of the cerebellum disturbed or destroyed the motive powers, and many persons have inferred from this, that the cerebellum was the co-ordinator and regulator of all voluntary motion whatever. The error here consisted in assuming a part for the whole. He expected far more from observations made with such minuteness, and detailed with so much care, as the author had employed in this case, than from mutilation, and the so-called removal of the cerebellum and cerebral hemispheres. He was astonished that any anatomist could place confidence in the inferences drawn by M. Flourens from such experiments.

Mr. Dunn had only one observation to make: while he fully concurred in the justness of what had been said by Professor Owen and Mr. Travers, as to the effects of inflammation in depressing and destroying the functional powers of a part, he felt assured they would agree with him, that in the incipient stage of the inflammatory process,—the stage of irritation, if he might use the expression,—the first and immediate consequences were nervous excitement, and exaltation of the functional powers.

Ninth Meeting of Session 1848-49. March 27, 1849.

Dr. Addison, President, in the Chair.

Case of Cervical Paraplegia in an Infant. By Henry Davies, M.D., Physician to the British Lying-in Hospital, etc. Eliza A. B——, aged twelve months and a half, had been weaned three months, without trouble, and had cut the two lower central incisors. On the 17th of November she had been particularly lively all the day, had taken her usual exercise, and was put into her bed, in the evening, apparently in good health. When the nurse went to bed she appeared restless, and crawled into the nurse's bed from her own, which was close beside it. At five o'clock in the morning she sat up in bed, and ate a finger-biscuit. At half-past five she uttered a peculiar cry, for which some Dalby's carminative was given, without relief. The child shivered slightly. At six o'clock she was put into a warm-bath, and had a dose of castor-oil. At eight o'clock she took a basin of bread-and-milk. At ten o'clock she was violently sick, turned cold, and looked blue about the mouth, nose, and eyes. She was now put into a second warm bath, when she appeared to lose the entire use of her limbs, and her countenance became vacant. From this time she lay prostrate. When seen by the author, on the evening of the 18th of November, she was perfectly conscious, her head was cool, and the temperature of the surface generally natural, the pupils contracting under the influence of light; pulse moderately frequent, small and languid; tongue slightly coated. The upper extremities were devoid of all power of motion or sensation, even from pinching or pricking with a pin; but the lower extremities were drawn up on the feet being tickled. Nothing unnatural was detected in the course of the spinal column, or any other part. Two leeches had been applied behind the ears; a blister was put between the shoulders; aperients and a saline mixture, with ammonia, were given. During the five weeks that the child lived, no change took place in the paralytic symptoms, and she remained perfectly conscious to within a few hours of her death. She was much weakened by diarrhœa, which set in on the 9th of December; and from that time she became emaciated, and was restless and feverish, while the lateral incisors came through the gums. During the five weeks, she cut six teeth. The body was examined twenty-four hours after death. The dura mater, as well as a portion of the brain, was torn in opening the head, and about an ounce and a half of sanguineous fluid escaped. The vessels on the surface of the brain were some-

what fuller than natural; the cerebrum itself healthy; the cerebellum and medulla oblongata, as well as the nerves at the base, were particularly firm. The medulla spinalis was equally firm, its investing membrane tough, and vessels tinged. There was no fluid in the ventricles of the brain, and no lesion was discovered either in the brain or in the spinal chord. The viscera of the thorax and abdomen were generally healthy in appearance. The author remarked, that paralysis, coming on suddenly, not preceded or accompanied by any apparent disease of the brain, is by no means uncommon in children between the first and tenth year. In all cases, he believed, the predisposing cause was the process of dentition; the exciting cause has, in the majority of cases, appeared to be some derangement of the digestive organs. But in the case now related, which is peculiar, from the sense of feeling, as well as the power of motion, being lost, he believed the exciting cause was the succession of shocks received by the spinal chord, through the use of a baby-jumper. He adduced some arguments and quotations from authors in support of his opinion; and, in an appendix, gave a brief account of four other cases of paralysis in children.

Dr. M. Hall.—The author had evidently felt all the difficulty, as well as all the importance, of an accurate diagnosis in cases of paralysis; and the question had for many years been an object of special investigation with himself. He would endeavour very briefly to state to the Society some of the conclusions at which he had been enabled to arrive. Besides hemiplegia and paraplegia, there are cases of partial paralysis, arising from the affection of the nerve of the part itself,—an affection most frequently seen in the face. But all cases of *partial* paralysis are not affections of this nerve merely; for we may have partial hemiplegia, hemiplegia *limited* to the eyelid, to the face, to the arm, to the leg, etc. We may also, he believed, have partial paraplegia, or paraplegia limited to an arm or leg; though of this he was not so certain. This remark led him to the case before the Society,—a case of paralysis of the two arms, and, as he understood, of the two arms only, the legs being unaffected. What could its nature have been? There are two cases, one of which the given case may have been: the first is effusion at the base of the brain, slowly encroaching on the spinal canal, and compressing the roots of each brachial plexus. But this case is slow in its accession, and the case before us was more or less sudden. The second is of a totally different character. Sudden attacks of paralysis of an arm, of a leg, or of both arm and leg of the same side, in children, are not very uncommon. They are generally preceded or accompanied by spasmodic or convulsive affection. He thought they were to be traced to dental, gastric, or intestinal irritation, acting, in a reflex manner, on the muscular system, and especially on the muscles of the neck, whence the veins of this region became compressed, and the nervous centres congested with blood, and there were coma and general convulsion. If such a state of things may occasionally leave one arm paralysed, it seems not difficult to imagine, that in rare cases, both arms may suffer the same loss of power.

Cases of perforation and other Lesions of the Stomach, occurring in connexion with Diabetes Mellitus; with Observations on the Gastric Origin of that Disease. By William Macintyre, M.D., Physician to the Western General Dispensary, Lisson-grove. The author commenced his paper with some general introductory remarks, on the unsatisfactory results of anatomical researches in diabetes. He then proceeded to relate three fatal examples of the disease which fell under his own immediate observation, and in which post-mortem appearances were met with in the stomach, strongly significant of that organ having been, at some period, subjected to a special morbid action. The first case was that of an adult male, in whom the disease was not recognised till about a year before the author was consulted. The symptoms were highly characteristic. Death took place

under a state of obstinate constipation. On a post-mortem inspection, among other lesions, the left upper lobe of the lungs was found broken down in its centre into a softened purulent mass, more like the disorganisation from unhealthy inflammation, than a tubercular vomica. The stomach was greatly dilated, and its walls very thin; its cardiac extremity presented a dark appearance, and its lining membrane was softened. The blood-vessels of this viscus were unusually large and turgid. The kidneys were much enlarged, and double their ordinary weight. The right freely admitted a wax injection; the left exhibited, under the microscope, the natural structure. The subject of the second case was also an adult male. He had been getting thin and weak for some months before he was seen by the author, and died, labouring under an extensive aphthous affection of the mouth and fauces, accompanied with symptoms of intense irritation of the stomach, pain at the epigastrium, eager craving for cold drinks, and incessant vomiting. The real nature of the complaint was not detected till two days before death, when the urine was found to be profuse, limpid, of specific gravity 1038°, and strongly saccharine. On inspection, the organ presenting the principal lesions was the stomach, which was remarkably capacious, and on being lifted up for examination gave way posteriorly at its large curvature, allowing the escape of a dark-coloured fluid into the abdominal cavity. Its walls around the rent thus caused were very soft, and throughout the entire splenic division were reduced to extreme tenuity, being in some places almost diaphanous. The subject of the third case was a little girl, only five years old, who had been for some weeks under treatment in the country, for what appeared to be remittent fever, and was brought to town for advice, when the urine was found to be very copious, of great density, the specific gravity ranging between 1040° and 1045°, and abounding with sugar. The constitutional symptoms corresponded with the character of the urine, and the child sank rapidly, and died exhausted. On dissection, an unusual dryness of all the tissues was observed. The kidneys appeared to be perfectly sound. No tubercles could be discovered in the lungs, but a coffee-coloured fluid, to the amount of several ounces, occupied the lower part of the pleural sac. When this fluid was removed, the cavity of the chest was seen to communicate with the stomach by one large irregular hole in the walls of that viscus, and several smaller perforations in the diaphragm. The openings in both corresponded exactly, but without any adhesion between the opposed surfaces. The structures bordering on the perforation were black, ragged, and thin, and the parietes of the stomach, throughout its whole splenic division, partook more or less of this attenuation. The fluid removed from the chest was inodorous, and found to consist chiefly of blood, epithelium, and textural detritus. In considering the nature and import of the changes observed in the stomach, the great question to be solved is, whether they are to be regarded as pathological lesions, or cadaveric changes. As respects the actual perforations in the last case, the author considers them to be post-mortem consequences, and analogous to those changes which, since Hunter's time, have been noticed to occur in connexion with various diseases, some of decidedly gastric character, but the greater number not primarily referable to the stomach. The facts thus brought into notice would seem to lead us to take a modified view of the theory of solution, and regard the successive changes from softening to attenuation, and from attenuation to complete loss of substance, as the work, not of a gastric secretion in a normal and healthy state, but as the effects either of that fluid in an altered or vitiated state, or of other products secreted by, or generated in, the stomach, and endowed with corrosive properties which do not come into full play till after death, when the tissues are already enfeebled and wasted, and no longer defended by the vital forces. In diabetes, the sugar existing in the primæ viæ suggests a fertile source of products possessing most active qualities. Those which we are most acquainted with are the lactic and oxalic acids, both of them hostile to the constitution.

MISCELLANEOUS INTELLIGENCE.

Resignation of Dr. Charles J. B. Williams. Dr. Williams has resigned his Professorship of Medicine in University College, and also his appointment as Physician to the Hospital. His successor is not yet nominated. Drs. Garrod and Parkes, in the mean time, take charge of the Hospital wards.

The Cholera at Tooting:—Mr. Drouett. At page 214 of our Number for February, we gave a short account of the terrible cholera mortality in Mr. Drouett's receptacle for pauper children. Mr Drouett has been tried for manslaughter, and acquitted.

St. George's Hospital. On Friday, March 30, the pupils of the Anatomical School of St. George's Hospital presented Prescott G. Hewett, Esq., the Assistant-Surgeon to, and Lecturer on Anatomy at that institution, with a beautiful and massive silver salver, as a testimonial of their respect and gratitude for his unremitting exertions in promoting their professional studies.

Medical Reform Tax. The *Lancet* (April 21) says that some medical reformers desire that a tax of £21,787: 10s. shall be levied on one thousand, one hundred, and fifty of the Doctors of Medicine now practising in England and Wales! Of this sum, it is proposed that the College of Physicians receive £16,537: 10s. It is also said, that gentlemen who either cannot pay, or do not wish to pay, the fines, may still be legal practitioners, under the proposed new law, by abandoning the title of Doctor(!) and joining the new college, which is to come in place of the Apothecaries' Society. Of the 1,150 doctors above referred to, 450 are Edinburgh graduates.

Meeting at the South Staffordshire General Hospital. The gentlemen who attended the meeting, were Dr. Topham, Mr. John Fowke, Mr. Dehane, Mr. Edwardes, Mr. Cartwright, Mr. Coleman, Mr. Dunn, Dr. Bell, Mr. Cooper, Mr. Gates, Mr. C. Underhill, Mr. Haslehurst, Mr. Grundy, Mr. Johnson, Mr. Campbell, Mr. Wright, Mr. Pope, Mr. Oakley, and Mr. Bunch. These gentlemen unanimously condemned the institution of the new "College of General Practitioners" as injurious to the interests of the public, and degrading to the general practitioner.

Medical Reform Excitement. Memorials against the measure promoted by the London Corporation and "National Institute" have been numerously subscribed at Manchester, Cheltenham, and other places. It is quite evident from the renewed and augmenting excitement on the subject of Medical Reform, that the only hope of a good measure being carried, is for the Government and the Legislature to decide on what is best for the public and the profession, and then make that law without reference to private interests, or cabals.

New Lunatic Asylum for Middlesex. At a meeting of magistrates last week, a mortgage was executed on the County rate for £23,000 for the new Asylum at Colney Hatch.

Testimonial to John Fowke, Esq. This gentleman having resigned his connexion with the Wolverhampton Dispensary, to which he had been Surgeon for fifteen years, has been presented by the inhabitants of the town and neighbourhood, with a silver salver value £50, on which was placed for his acceptance the handsome sum of £1,508.

Berzelius. The Academy of Sciences of Stockholm, at its recent anniversary meeting, wore mourning in token of respect for the memory of this illustrious chemist. The King was among the members present. The widow of Berzelius has gifted his library and laboratory to the Academy.

APPOINTMENTS.

Brown, C. B., M.D., elected Physician-accoucheur to Queen Charlotte's Lying in Hospital.

Critchets, George, Esq., F.R.C.S Eng., formerly Assistant-surgeon, was (on the resignation of John Dalrymple, Esq.) appointed, on the 2nd April, Surgeon to the Royal London Ophthalmic Hospital.

Guthrie, Mr., has been appointed Consulting-surgeon to the Westminster Hospital, vacant by the death of Mr. A. White.

OBITUARY.

Bond, John, Esq., Surgeon, at Nuneaton, Warwickshire, on 10th April, aged 78.

Blair, Michael, Esq., at Kildysart, Ireland, of cholera, on the 7th April.

Blandin, Professor, Paris, in the fiftieth year of his age, on the 17th April. He was Professor to the Faculty, for Operations and Surgical apparatus; and was the author of several well-known and valuable works.

Coley, John, Esq., jun., Surgeon, at Bridgenorth, of apoplexy, aged 40.

Down, John Sommers, Esq., M.D. Edin., aged 65, at his residence, Ilfracombe, Devon, on the 19th March.

Dunn, Edward, Esq. (of Ulverston), Surgeon, aged 30, youngest son of the late John Dunn, Esq. of Durham, at Liverpool, on the 1st April.

Gardner, George, M.D., Superintendent of the Botanical Garden, Peradenia, Kandy, Ceylon, at the Governor's house, Neuri Ellia, Ceylon, suddenly of apoplexy, on the 10th of March. The deceased was an indefatigable naturalist; and well known as the author of "Travels in the Interior of Brazil."

Harvey, Robert, Esq., Surgeon, at Oulart, Ireland, of malignant fever, caught in the discharge of his duty under the Board of Health, on the 19th March.

Jey, Robert, Esq., Surgeon, aged 88, at Queen Camel, Somerset, where he had practised for upwards of sixty years, on the 16th of January.

Locke, Robert, M.D., at Rathkeale, Ireland, of cholera, on the 7th April.

Mullin, James, M.D., at New Ross, of cholera, on the 7th April, aged 56.

Russ, Edward, Esq., Surgeon (late of Castle Cary, Somerset, and formerly of Wolverhampton), at Graham's Town, Cape of Good Hope, on 17th January, aged 33.

Serre, M., Professor of Clinical Surgery in the University of Montpellier, of apoplexy, in his 49th year, lately.

Walsh, Munn, Esq., M.D., at Coote Hill, of fever, caught in the discharge of his duty as Medical Attendant of the Fever Hospital and Dispensary, lately.

Warren, Robert, M.D., at Kinsale, of fever, on 7th April.

Yonge, Walter, Esq., M.D., aged 24, at Clapham, Surrey, only son of Walter Yonge, Esq., Surgeon, St. Ives, Cornwall, on 15th March.

BOOKS RECEIVED.

Addison (Dr. Wm) on Consumption and Scrofula. London: 1849. Bowman's Lectures on the Eye. London: 1849. Bremner, Hints on Obstetric Practice. Edinburgh: 1849. Brown (F. J., M.D.), Questions and Observations on Hygiene. London and Malta: 1849. Bushman's Observations on Hydropathy. Berlin and London: 1846. Critchett on Ulcers of the Lower Extremity. London: 1849. Hare on Spinal Diseases. 3rd edition. London: 1849. Hugman on Morbus Coxarius. Plates. London: 1849. Macdonnell, Case of Acute Cerebro spinal Arachnites. Montreal: 1849. Macdonnell on Hydrocele of Tunica Vaginalis. Montreal: 1849. Meigs on Obstetrics. Philadelphia: 1849. Mitchell on the Speculum. Dublin: 1849. Pharmacopœia of the Hospital for Consumption. London: 1848. Proceedings of Westminster Medical Society; Session 1848-49. London: 1849. Report of Royal Edinburgh Lunatic Asylum for 1848. Rynd on Strictures of the Urethra. London: 1849. Shaw's Medical Remembrancer. 3rd edition. London: 1849. Smee's Electro-Biology. London: 1849. Smith (Tyler) on Parturition. London: 1849. Solly on the Brain. 3rd edition. London: 1847. Williams (Dr. C. J. B.), Principles of Medicine. 2nd edition. London: 1848.

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ORIGINAL COMMUNICATIONS.

CONGENITAL CATARACT MISTAKEN FOR MYOPIA AND AMBLYOPIA.

By W. WHITE COOPER, Esq., F.R.C.S., Senior Surgeon to the North London Infirmary for Diseases of the Eye.

FROM the circumstance of three instances having fallen under my notice, in which Congenital Cataract had been mistaken for myopia, and two in which it had been regarded as imperfect sensibility of the retina, it would appear, that such errors are more common than is suspected. The publication of the following may, perhaps, assist the diagnosis of some similar cases, and thus prevent reproach from being cast on the surgeon consulted.

CASE I. Margaret Hay, a delicate girl, 15 years of age, was brought to me on the 15th of March 1847, for supposed amblyopia. Her mother stated, that her attention was first drawn to her daughter's sight, when she was about five years of age, in consequence of the great difficulty experienced in teaching her to read. For some time, it was considered to be stupidity on her part, and she was frequently punished; but at length, it became evident, that her sight was imperfect. An oculist was consulted, who, it would seem, made but a superficial examination of the eyes, and pronounced the case to be dulness of the retina, expressing his opinion that she would "grow out of it" in time. No improvement had, however, taken place up to the period of my seeing her. On placing a book with moderate sized type in her hand, she held it rather obliquely, about four inches from her eyes, and slowly spelt the words. Beyond the distance of four feet, she could merely discern the outline of a face, and her ideas of colour were very imperfect. There was nothing unnatural in the general aspect of the eyes; but, on close examination, there was an absence of that blackness of the pupil, so characteristic of a perfectly healthy eye. The irides were very active, and the pupils contracted strongly under light. A drop of atropine was placed in each eye; in about ten minutes, full dilatation of the pupils had taken place, and displayed two greyish semitransparent lenticular Cataracts, not filling the dilated pupils, but

permitting circles of choroid to be seen around the margins of the lenses. There was immediate improvement in the sight; large objects were seen with distinctness, and colours with new brilliancy, but small objects were still confused.

On the 20th March, I operated on the right eye, passing a cutting needle through the margin of the cornea, and slicing up the lens into small fragments, which were passed into the anterior chamber; the eye was carefully protected from the light, and the ordinary treatment adopted. At the expiration of five months, all traces of the Cataract had disappeared. The left eye was operated on early in August 1847, and no unpleasant symptoms followed. In this eye, a small fragment of capsule floated in the pupil, for some weeks after the lens had disappeared, but it eventually shrank; and when I last saw the patient, in September 1848, she enjoyed most excellent vision with both eyes, by the aid of glasses, which, however, she was desired to use as little as possible.

Case II. Joseph Unwin, aged 23, had suffered, from infancy, from imperfect vision, which was referred to partial amaurosis, the result of irritation from teething. He had learned to read large characters with difficulty, and wrote a great school-boy hand. He had tried a variety of spectacles, without deriving assistance; vision was best in the gloom of twilight, and worst on a bright day. He consulted me on the 15th June, 1847. On examination, the globes and irides were found perfectly healthy, but there was the grey hue of the pupil, which suggested at once the nature of the case; and the full dilatation of the pupils, by atropine, brought into view Cataracts very similar to those described in the preceding case. On the 26th of June, the left eye was operated on by solution; it did well, and the patient left town on the tenth day after the operation. By the 14th of September, two-thirds of the fragments of the lens had been absorbed, and the eye had recovered considerable vision. On the 16th, the right eye was operated on, and its subsequent progress was equally satisfactory with that of the former. By March 1848, the left eye had perfectly recovered, and there was no vestige of Cataract remaining; a small fragment still lay at the bottom of the anterior chamber of the right eye. He was supplied with proper glasses, with strict injunctions as to their guarded use; and, with their assistance, seemed to have acquired a new sense, so great was the improvement in his power of sight.

Case III. H. T. B., Esq., æt. 19, consulted me in January 1848. He stated, that, since birth, vision had been very indistinct; that three years previously, he had consulted an eminent oculist, who stated that nothing could be done for him, but that he must put up with his indifferent sight, and wear 28-inch presbyopic glasses, which enabled him to read, though with difficulty. On examining the eyes attentively, a greyish hue of the pupil was perceived; and, on dilatation with atropine, greyish semitransparent Cataracts were seen, the opacity being more dense around the circumference than in the centre. Vision was not improved, but rendered more indistinct by the dilatation. An operation was recommended; and, after the sanction of two other gentlemen had been obtained, I operated on the left eye on June 20th. The lens was freely cut up with a broad needle; the case did perfectly well, and, on the 28th June,

he returned home. On the 4th August, about half the fragments had disappeared, and the upper part of the pupil was clear. On the 25th September, the Cataract had quite disappeared, and, with a proper glass, he could read the smallest print at two feet distance. On that day I operated on the right eye, which did perfectly well until the 2nd of October; when, by imprudently exposing himself to a current of air, he took cold, and was attacked during the night with severe pain in the eye and orbit, and scalding lachrymation. On the following day, a red zone was visible around the cornea, and there was great intolerance of light. Four leeches were applied, with fomentations, and he was ordered a grain of blue pill, with hyoscyamus, every hour. On the 4th, the mercurial influence became apparent, and the eye was speedily free from pain. By the 8th, all symptoms of inflammation had disappeared, but there were two small adhesions, giving the pupil, when dilated, a sort of hour-glass form. On the 12th he left town. The case continued to progress favourably; and on the 20th January 1849, he could read exceedingly well with the eye, although there was a fragment of opaque capsule rather obstructing the pupil. Since that date I have not seen him, as he is pursuing his studies at the University of Cambridge, but have been informed that the capsule is gradually shrinking.

Case iv. Edward Thomas, aged 19, was brought to me in May 1848, supposed to be suffering from myopia. As he entered the room, he advanced cautiously, frowning, and shading his eyes with his hand. He was the son of a Suffolk farmer; and from infancy had been supposed to be very near-sighted. An optician had supplied him with several pairs of glasses; but none improved his sight. On a book being placed in his hand, he turned his back to the light, and holding the page about three inches from his eyes, slowly spelt out words in large type. Features could not be discerned. In this case, also, the grey pupils indicated Cataracts, which were brought to light by atropine. On the 15th of May, the right eye was operated on; the lens being freely divided. On the third day, slight inflammation followed, but was subdued by leeches, fomentations, and cooling medicine; and, at the expiration of three weeks, the patient returned home. The fragments of the Cataract had almost wholly disappeared by September, when a similar operation was performed on the left eye. No inflammation followed, and the patient was able to return home at the end of a fortnight. After the lapse of ten months from the date of the first operation, the patient had regained considerable power of vision with the right eye, unassisted by glasses, which he had used sparingly. The left eye was making most favourable progress, at the date of the last report.

Case v is related in my work, *Practical Remarks on Near-Sight, etc.* It is unnecessary to quote it at length, as, in all its essential features, it resembled Case iii: there being one point of difference, however,—that the sight of the patient (a gentleman thirty years of age), was greatly improved when the pupils were fully dilated.

Remarks. The amount of turbidity of the crystalline lens in Congenital Cataract, may vary in degree, from the colour of milk and water, to the faintest haze. In the latter case, the capsule is clear; but the opacity

involves the whole substance of the lens, minute spots being sometimes scattered over the surface. Unless the pupils be dilated, it is extremely difficult to recognize the true nature of such cases; but when the iris is under the influence of belladonna, the semitransparent Cataracts will be seen suspended, as it were, in the pupil. This appearance arises from the Cataract being less than the natural lens, and a clear space thus existing between its margin and that of the pupil, which permits the jet-black choroid to be seen beyond it. When a young person has dull vision, is unable to see distant objects, reads slowly, letter by letter or word by word, and is unable to continue reading beyond a short time, holds the book very near the eyes, and turns the back to the light, haziness of the crystalline lens may be suspected. A rolling of the head from side to side, and cautiousness of gait, are peculiarities very characteristic of these cases. Such patients find a difficulty in describing the amount of imperfection of their sight; for, clearness of vision being comparative, a person, who has never seen otherwise than obscurely, is unable to judge of the perfection of sight possessed by others, and can only describe his sensation, according to the standard formed by his own perceptions. The appreciation of colours affords an illustration of this; for the more delicate shades are invisible to such patients, and are seen by them with astonishment after the pupil has been dilated, or after the lenses have been absorbed. Myopia is the affection, with which such a condition of lens is most likely to be confounded; but the distinction will be made apparent by trying the patient with concave glasses, which, in Cataract, render the vision worse instead of better. In extreme cases of myopia, the pupils are generally large; whereas, in all the cases of Congenital Cataract seen by me, the pupils have been remarkably active, and contracted to a very small size. If doubt exist, dilatation with atropine will at once display the true nature of the case.

In treating the description of Cataract under consideration, we have choice of *two operations*.

The first and simpler, is that of making a small opening in the capsule of the lens, so as to expose that body to the influence of the aqueous humour without disturbing it. The lens becomes opaque in from fifteen to thirty-six hours, and gradually undergoes absorption; but so slowly, that a second, or even a third operation may be required. I have seen the lens barely reduced one half, at the expiration of six months after the operation; and it must be borne in mind, that the complete opacity of the lens, caused by the aqueous humour, renders the eye useless for a considerable time.

The second operation is that of freely cutting up the lens with a broad needle: this proceeding is more severe than the former, but of the two I prefer it, as materially shortening the duration of the cure. If carefully and effectually done, a second operation is seldom required. It is desirable to cut the lens into the smallest pieces possible, as they will then be quickly absorbed. The consistence of such Cataracts is about that of firm jelly; and, by dexterous manipulation, the process of division can be accomplished with comparatively but little violence to the eye. It is important that the pupil should be kept under the influence of belladonna, for some weeks after the operation, as the risk of adhesions (should a slight amount of iritis supervene), will be greatly diminished

by so doing. If the patient be brought, by careful management, into a fit state before the operation, and due care be taken afterwards, but little trouble may be anticipated. There are, however, two conditions in which the first operation is to be preferred: viz., in persons who have suffered from any inflammation of the sclerotic or iris, and in those who are constitutionally prone to inflammation of a rheumatic character.

It is to be remarked, that there are some cases in which an operation is not necessary,—that is, when the central portion only of the lens is affected, the remainder being transparent. Dilatation with belladonna here affords such assistance, that an operation is not required; and, fortunately for such persons, the effect of the belladonna does not decrease by use. Mr. Tyrrell mentions a case, where it was employed with full effect for ten years, and another, in which constant use for eighteen years did not impair its efficacy.

In cases where an operation is indicated, the earlier in life it can be performed, the better: the younger the patient, the greater is the power possessed by nature, of repairing the imperfection of vision caused by the absence of the lens. Glasses should be used as little as possible; and, even in adults, the amount of accommodation to distance and perfection of vision acquired is truly surprising, if they will have the resolution to abstain from the luxury of glasses.

To prevent confusion of vision when the return of sight commences, an opaque glass may be worn before the eye, on which the operation has been performed. When the vision has so far returned, that the individual can find his way about without difficulty, and can discern objects of a moderate size, the second eye may be submitted to operation. It is proper to warn the patient, that the sight will be rendered worse by the operation, and will continue so until absorption have made some progress. The opaque fragments of the lens block up the pupil; and if they be not prepared for this, alarm is likely to be excited in the minds of the patient and his friends. In from four to six months, the Cataracts may be expected to become entirely absorbed; it may happen that portions of opaque capsule obstruct the pupil, but it is not desirable to be in haste to interfere with these by operation, as they will often shrink, by their own contractility, out of the way.

In conclusion, I may mention two interesting facts, connected with the hereditary character of Cataract. His late Royal Highness the Duke of Sussex informed me, that Cataract was brought into the present royal family, by the marriage of one of his ancestors with a princess of Saxe Coburg Gotha. She became blind from Cataract, and the following members of the royal family have since been afflicted with that disease; the Duke of Cumberland (of Culloden celebrity), George the Third, George the Fourth, the Duke of Gloucester, the Duke of Sussex, and the Princess Sophia. It is not generally known, that George the Fourth had Cataract; but the Duke of Sussex assured me that such was the case, and that it was one cause of his seclusion. Three years ago, a young woman came under my notice with Congenital Cataract, and she stated that her grandfather, father, uncle, aunt, and three sisters, had all been born with Cataracts.

2, Tenterden Street, Hanover Square. May 1849.

ON SUB-ACUTE INFLAMMATION OF THE OVARIES AND OF THE FALLOPIAN TUBES, AS ONE OF THE CAUSES OF FUNCTIONAL STERILITY.

WITH CASES ILLUSTRATING THE PRACTICABILITY OF ITS CURE.

By EDWARD JOHN TILT, M.D., Physician to the Farringdon General Dispensary, and to the Paddington Free Dispensary for the Diseases of Women and Children.

[*Read before the Westminster Medical Society, April* 28, 1849.]

Considering the thickness of the veil thrown over the mysteries of generation, it is not to be wondered, that some of the causes of Sterility should be hidden from our view. As the general result of the practical observations of medical men, and of the dreamy imaginings of philosophers, we may class the causes of Sterility under three heads. 1. The mechanical and self-evident causes of Sterility, such as absence of the ovaria, or their complete degeneration; the occlusion of the Fallopian tubes; the stricture or occlusion of the uterus, or of the vagina. 2. The pathological or disputable causes of Sterility, or such as are not admitted by all, or, if so, are differently interpreted; viz.: chlorotic atrophy of the ovaria; syphilitic, gonorrhœal, or idiopathic inflammation of the utero-vaginal mucous membrane; and that form of Subacute Ovaritis, which is one of those affections described by authors under the common denomination of dysmenorrhœa. 3. There is also a mysterious cause of Sterility, which we may term physiological incompatibility; in virtue of which a healthy, and otherwise well-assorted pair, cannot bring their prolific fluids to that point (so to speak) of crystallization, at which life begins; while, if each of these combine with other individuals of the opposite sex, they are able to generate that definite compound called man. We purpose, for the present, to leave uninvestigated those causes which are self-evident, as well as those which are mysterious, and to call attention to one of the disputable sources of Functional Sterility, in order that the conclusions of my own limited experience may be corroborated by the elders of the profession.

The position I assume is, that Subacute Ovaritis is a frequent cause of Sterility: and I ground this opinion—1st. On physiological data; 2nd. On the testimony of authors; 3rd. On cases.

I. Physiological Data. It has been amply shown, by the successful experiments of modern observers, that the ovaria are the essential organs of reproduction, and that in them originate the greater proportion of those sympathies, which have been so long called uterine; and furthermore, that the development of the pelvis, of the uterine system, and of the mammæ, the function of menstruation, and all the peculiarities of the human female, depend upon the ovaria. These may therefore be considered the essential organs of the generative system, for they are always present, whatever form the organization may assume. We may, then, admit that the ovaria not only supply that *pars ventris* (as the Roman jurists used to say), which, with the stimulus of the seminal fluid, can be developed into an individual similar to his progenitors, but impel the female to seek the satisfaction of those sexual desires, which ensure the continuance of our race. It is even asserted by my friend Dr. Tyler Smith, in his valuable *Lectures on Midwifery*, that the ovaria

incite the uterus to the reflex motor actions, which are necessary to the expulsion of the impregnated ovule, when it has attained the fulness of fœtal growth. These phenomena, which may well surprise us, when we consider their vast importance, as compared to the apparent insignificance of the ovaria, are the natural results of the peculiar function of these organs—menstruation. We now use this word, not in its popular and confined sense, but in the more enlarged and scientific comprehension of the term; for by menstruation, we mean the monthly and independent development and elimination of an ovule, and not merely the catamenial flow, with which it may or may not be attended. The phenomena of ovulation have been well studied in the lower animals, and also in numerous instances of unimpregnated females, dying from various causes, during menstruation. Without repeating what has been so well described by Dr. R. Lee, Dr. M. Barry, and Dr. Ritchie, we will only call to mind certain physiological facts, such as the sanguineous turgescence of the ovaria, the development of the vessels on the vesicle and on the peritoneal membrane, and the gradual thinning and ultimate bursting of the vesicle; remarking, that when similar appearances are observed on the skin, we call the process inflammation; whereas we are obliged to consider the phenomena alluded to, as the result of a healthy natural process. Though we cannot give the name of inflammation to such physiological conditions, still we may fairly admit, that the physiological excitement of menstruation may easily merge into the pathological process of inflammation. If we turn to the symptoms of ovulation, we find, that in some women, this species of parturition is not attended by more pain, than is the act of oviposition with fish; but generally it is accompanied by symptoms, which present the diminished, though faithful portraiture, of what are called uterine symptoms—pains in the loins, in the ovarian regions, and pains of an expulsive nature, or, as they are well termed, bearing-down pains. These do not depend on any mechanical pressure, but are of a nervous nature, and owe their presence to communications, which have been shown to exist, between the uterine and the spinal nerves, distributed on the surrounding pelvic viscera. These pains are often extraordinarily aggravated; and, when this is the case, may we not infer, that the ovarian excitement is passing from the physiological to the pathological type? This inference is confirmed by an increase of heat, often remarked over the site of the ovary, when examining with the hand, or by the finger, during a vaginal exploration. Morbid ovulation, with its attendant uterine symptoms, having once taken place, there will be a tendency to its repetition on each succeeding period; thus giving pertinacity to a disease, which, in any other organ, would cease by degrees. Such are the anatomical and physiological facts, and the local or immediate symptoms of morbid ovulation; but the general symptoms will vary, in accordance with the nature of the constitution, in which they may be developed; thus, if they occur in thin, nervous, highly excitable females, we have hysteria as an attendant on difficult menstruation; if, on the contrary, they take place in lymphatic, delicate females, it will be accompanied by Sterility, without even any considerable amount of concomitant pain; whereas, in the scrofulous, morbid ovulation may give rise to certain forms of ovarian cysts.

II. The Testimony of Authors. Having noticed the phenomena of morbid ovulation, and marked its prevalence, we now proceed to observe, as a fact which runs parallel to this, the extreme frequency of morbid structure in and around the ovaries. We do not allude to ovarian tumours, nor to acute ovaritis, but to the occurrence of other lesions, which are not connected with any well-defined pathological condition. Morgagni, in one of his admirable letters, expressed his opinion respecting the frequency of these, *then* unaccounted for, ovarian lesions. Since his time, and particularly since the impulse given to ovarian physiology, the frequent recurrence of these lesions has been noticed by our most popular writers on the diseases of women, by Drs. Ashwell, R. Lee, Ritchie, Copland, Velpeau, Newmann, etc. Now, we may allow it to be an incontrovertible principle, that when two parallel facts do not contradict, but, on the contrary, support and explain one another, they are bound together by a link of causality; we therefore conclude, that those frequent and apparently unaccountable ovarian diseases, are the sequelæ of the no less frequent process of morbid ovulation. When found in other organs, hypertrophy and vascular congestion, friability of tissue, thickening of parts, and development of false membranes, are called inflammatory; we therefore infer, that when found in the ovaries, they likewise owe their origin to inflammation, and are the results of Sub-acute Ovaritis. Conducted to this conclusion by physiological reasoning, and by the best and strongest testimony, we find, that the disease described by authors as dysmenorrhœa and menstrual colic, is a group of symptoms often produced by Subacute Ovaritis. Dysmenorrhœa may be produced by the spasmodic contraction of the neck of the womb; it may be the result of ulcerations in the cavity of the neck of the womb, or simply of its inflammation and of the temporary occlusion thus determined; but the most general cause is that, which I have just assigned. The action of Sub-acute Ovaritis in the production of dysmenorrhœa is twofold.

1. Subacute Ovaritis may of itself produce dysmenorrhœa, as a simple result of the process of morbid ovulation, and not by the agency of any appreciable inflammation of the womb, or of its neck, and without any appearance of false membrane in the catamenia. This is what I have seen, and believe to be frequent.

2. Ovaritis, as Dr. Oldham has well shown, often causes dysmenorrhœa by determining hypertrophy of the uterus, inflammation of its neck, and a diphtheritic exudation from its mucous surface. We know that the ovaries, in virtue of their governing influence over the uterus, induce periodically a state of vascular turgescence in the walls of this organ; and it is not surprising to find that Ovaritis induces frequently the exaggeration of this physiological state, or the inflammation of the inner surface of the womb and of its neck, thereby causing the retention or painful excretion of the catamenia, which are sometimes mingled with pseudo-decidual membranes. Dr. Rigby has sought to establish as a rule, that when Ovaritis is the primary affection, the catamenia are usually attended by these exudations; but we do not think the assertion is supported by a sufficient number of facts, whereas the same membraniform exudations have been found in the catamenia, when there has been no evidence of the existence of Ovaritis.

When, therefore, we remember, that, in the majority of cases of difficult menstruation, there is no such production of uterine false membranes, no inflammatory occlusion or spasmodic constriction of the neck of the womb, and that it has been amply proved that the ovaria are the point of departure of the greater proportion of those sympathies, which were formerly *all* attributed to the uterus, may we not agree with those who place the origin of the disease in those organs, which are the fountain heads of menstruation, and the centre of the sexual system in the unimpregnated subject? Having thus endeavoured to show that the disease described by authors as dysmenorrhœa is, in many cases, Subacute Ovaritis, I need not dwell on the connexion allowed to exist between dysmenorrhœa and Sterility, as two concomitant facts depending on each other, or on the same cause. The conclusions at which Newmann, Madame Boivin, and others have arrived, as the result of their great experience, is, that "Sterility generally depends upon a morbid state of the ovary, long and insidiously developed, and giving origin to other ovarian disease"; and Hufeland, the patriarch of German medicine, affirms: "that half the lifetime of those subject to dysmenorrhœa is devoted to suffering, while the remainder is blighted by Sterility."

III. Cases. Having given my reasons for believing that Subacute Ovaritis is the pathological condition, to which are often to be attributed the more or less complicated group of symptoms, described under the name of dysmenorrhœa, I now come to the cases which illustrate the position. First, however, I will attempt, in a few words, to answer a very natural question. How does Subacute Ovaritis produce Sterility? In two ways; 1st, by deranging the healthy state of the vesicles and ovules; 2nd, by impeding their exit from the ovaries.

1. Anatomo-pathologists have found the stroma infiltrated, and the friability of its tissue increased; the vesicles are sometimes found atrophied and blighted, their liquid contents partly absorbed, the follicles looking like grayish or whitish sacs, with wrinkled parietes. They may, on the contrary, be hypertrophied, of the size of a pea, or larger, round or fabiform, with an extremely dense white internal membrane, having a polished surface of the thickness of parchment. They may be diaphanous or pellucid, having interposed between them and the parenchyma of the gland, one or two other distinct membranous layers, with or without intermediate granular matter. They may contain either a green, yellow, or fatty liquid, or a pulpy substance, like the interior of an encephaloid cyst, or even solid saline concretions, as observed by Morgagni. These white bodies and cysts are never observed before menstruation; but they may be met with in every other stage of the woman's life, in virgins as well as in prostitutes.

2. The texture of the ovarian parenchyma may be healthy, but their peritoneal surface may be so coated with false membranes, that the process of ovulation is insufficient to break the impediment, and thus permit the exit of the ovule. Sometimes the Graafian vesicles themselves are so thickened, as almost to seem incapable of bursting under the influence of menstruation.

3. The anatomical lesions of the Fallopian tubes have been but little attended to; but we know, that frequently the corpus fimbriatum

is destroyed. This of itself, though it might not impede conception, would render uterine ingravidation almost impossible; for the oviduct would not be able to apply its infundibulum to that particular portion of the ovary, from which the ovum is to fall.

But the destruction of the corpus fimbriatum is, generally speaking, accompanied by the occlusion of the oviduct at its abdominal end, which is then converted into a *cul de sac*, and, of course, does not allow impregnation; the same effect would be also produced by the obliteration of the uterine end of the Fallopian tubes. The Fallopian tubes may be even free in their whole extent, but so modified by subacute or chronic inflammation, as not to allow the free passage of the seminal fluid to the ovary, or of the ovum to the womb. A web of false membranes has been frequently found lining the interior of the oviducts of prostitutes, and of those women who have recovered from puerperal metro-peritonitis; whereas the same tubes are often found full of pus in those who have died in the acute stage of the disease. Here the question naturally arises—Is not the uterine extremity of the oviduct often blocked up by a glutinous substance, similar to that which, at times, produces the temporary occlusion of the neck of the womb? This has been observed in the dead subject, and no doubt often exists in the living body. Whether or not this condition furnishes any direct therapeutical indication, we will leave for future consideration.

In some cases, the oviducts may be perfectly healthy, and still unable to perform their allotted task, owing to false membranes, by which they may be glued to the neighbouring viscera, so as to preclude the possibility of their precise adaptation to the ovaries. Varying in density, from that of the finest diaphanous membrane to that of strong ligamentous bands, these false membranes are of very frequent occurrence; and, in prostitutes, the ovaries and Fallopian tubes are seldom found without some one or other of the lesions already described, if we may rely on the testimony of Walker, Renaudin, and Dr. Oldham. Parent-Duchatelet does not allude to this fact, but he nevertheless states, that there was only a yearly average of *twenty-one* deliveries by one thousand prostitutes in Paris. I merely mention this, as bearing on the point in discussion, but do not mean to infer that the average of conceptions was equally small. Such anatomical notions are, no doubt, incomplete. Heretofore, the lesions of these organs have been neglected, because they did not embody an idea, or uphold any particular point of doctrine. As the physiology of the ovaria scarcely dates from yesterday, we need not be surprised at finding their pathology in an embryonic state. These lesions have been cursorily noticed by embryologists or physiologists, studying the ovaries from their own peculiar point of view; and, when the numerous ovarian lesions are studied with the microscope and other resources now called to the aid of the anatomist, and the facts elicited are put together by means of a constructive idea, it will then be no longer difficult to present a richer display of anatomical facts, than the meagre elements of information we now possess.

Case. When practising in Paris in 1844, I was consulted by a gentleman, about thirty years of age, presenting every appearance of good health, who told me that his wife was in her twenty-fourth year, that at

the age of fifteen she menstruated for the first time, but that this function had always been accompanied by pain, and was frequently irregular in the time of its appearance. He had been married five years, and since then, the menstrual discharge had been more regular, but accompanied by a great increase of pain. She was seldom subject to leucorrhœa, but sexual indulgence was sometimes painful. For the last year, various means of medical relief had been tried; but with so little success, that her husband told me, he was not induced to consult me for his wife, in the hope of my being able to relieve her monthly suffering, but to inquire if there were any remedy for Sterility. The lady presented all the appearance of a lymphatic constitution; she looked delicate, but was in a tolerable state of health; she did not expect to be unwell for the next fortnight, and she was not then in pain; but on rapidly depressing the ovarian regions with the united tips of the fingers, I produced a pain similar to that she experienced when unwell. On examining by the vagina, I received an indistinct perception of a small tumour, which I took for the right ovary; but on making a rectal examination, I distinctly felt the ovaria, each being swollen to about two inches in the long diameter. They were painful on pressure. Having ascertained the tumefied state of the ovaria, and their tenderness on pressure, and bearing in mind the previous history of the patient, I considered them subacutely inflamed. I determined, however, to do nothing previously to the next monthly period, so that I might judge of the nature of her sufferings, and afterwards have full three weeks to alleviate them. A few days after, she was suffering from all the symptoms of dysmenorrhœa; the pain, on pressing the ovarian regions, was greater; and, on examining through the rectum, the ovaria were found still larger and more painful. When the period was over, I began the treatment, by applying eight leeches to each ovarian region; the leech-bites being healed, I applied over the same region a blister, five inches in length; the cuticle was not removed, and three days after, when the skin was healed, I ordered the same region to be carefully rubbed for ten minutes, morning and night, with about the size of a walnut of the following ointment: ung. hydrar. ʒi, ext. belladon. ʒi, ext. hyoscy. ʒi, camph. (solut. in spirit.), gr. x. The abdomen to be afterwards covered with flannel, without removing the ointment. I also prescribed enemata, aquæ camph. ʒxv, aquæ lauri cerasi, ʒvi; sometimes adding tinct. hyoscy. ʒiii. A third of this quantity was injected into the rectum three times a day, the chill having been first taken off, so that it might be as much as possible, if not entirely retained. Due attention was paid to the regularity of the bowels, mercury being avoided, and saline purgatives preferred. For the first few days, until the blistered surfaces were healed, the patient only left her bed to recline on the sofa; afterwards she was allowed to take exercise as usual, and her strength was kept up by generous diet. Abstinence from the nuptial bed was strictly enjoined. On examining by the rectum a few days before the expected time, I found the ovaria diminished in size, but still painful to the touch. The next menstrual period was accompanied by the usual dysmenorrhœal symptoms; but the patient said, that she suffered less than she had ever done since her marriage. When menstruation had ceased, I sub-

jected her to exactly the same treatment, and her sufferings were again diminished during the ensuing menstruation. She submitted to the same treatment a third time; and, on exploration, I found that the ovaries had resumed their usual size, and that pressure was not accompanied by pain. The third menstruation since the beginning of the treatment was attended by little pain. I discontinued the leeches, blister, and ointment, but advised the regular continuation of the enemata. I permitted cohabitation, at the same time recommending moderation to her husband. Four months after this, my patient was in the family-way, and in due time was delivered of a fine boy.

Remarks.—The phenomena presented by this case are not uncommon, as many of the cases called dysmenorrhœa are attended by them all. The treatment was, at any rate, rational;—local depletion, to diminish the ovarian congestion; blisters, to break the chain of morbid nervous influences (fostered by the long habit of suffering) in the organs of ovulation; mercurial ointment, narcotic extracts and camphor, to reduce the pain and vascular excitement. The enemata were administered with the same intention. In another case, the symptoms of dysmenorrhœa were evidently caused by marriage. The patient was a young and delicate female, in whom was found the same ovarian swelling, and where similar treatment was employed; but I did not meet with an equal response in the way of attention to my advice. Her pains were, however, diminished; but relapses occurred. She was under treatment for six months; and, though she had been sterile for seven years, she shortly afterwards became pregnant. When residing at Rome, I was asked to attend a similar case, and have since heard that the carrying out of my advice was followed by pregnancy, after six years of unfruitful marriage.

I have stated that the uterine extremities of the oviducts are sometimes found, in the dead body, plugged up with thick mucus; and that this condition, no doubt, sometimes holds good in the living, thus opposing an effectual impediment to conception. Does this condition give any therapeutical indication? Dr. Mackintosh and Dr. Simpson have shown that we may, in some instances, effectually relieve patients suffering from a similar obstruction of the neck of the womb, by probing and dilating its canal. Will men of eminence likewise attempt to probe, dilate, and inject, the Fallopian tubes? We hope not, for peritonitis is not a disease to be trifled with. When we consider that we can only *guess* at this possible cause of Sterility, and have no positive evidence of its existence; when we remember that, in the dissecting-room, it is often difficult to pass a probe from the uterus into the Fallopian tube,—the difficulty of the operation seems tantamount to impossibility. This impossibility is not to be regretted; for the advantage attending the operation could only be attained, at the risk of imminent danger to the patient's life.

It was observed, at the beginning of this paper, that Sterility is not unfrequently the result of Subacute Ovaritis; and having shown this assertion to be grounded on physiological data,—the only sure basis of pathological facts,—I then confirmed this deduction by a sketch of the

opinions of our eminent predecessors and contemporaries, and lastly, adduced practical proofs of its truth.

The disease in question seems deserving of attention, for two reasons: 1, Because, if not cured, it not only maintains the existence of a state of suffering and ill health, but lays the foundations of numerous ovarian disorders, whose origin is obscure, and whose treatment is not only very dangerous, but still more uncertain; 2, Because it admits of cure,—and nothing tends so much to the honour of the profession, as the being able not only to preserve the life of individuals, but also to enable them to perpetuate their families. Great was the gratitude of Henry II of France, to the celebrated Fernelius, for enabling him to raise issue from Catherine de' Medicis, after ten years of a fruitless marriage; and though we cannot all be court-physicians, we may still experience similar gratitude from those, who are equally desirous of leaving to posterity their less illustrious names.

Postscript. I did not suppose that the question—"Will men of eminence likewise attempt to probe, dilate, and inject the Fallopian tubes?" would so soon have been answered, or that catheterism of that passage had been already performed. At the meeting of the Westminster Society (May 5, 1849), following that at which my paper was read, Dr. Tyler Smith exhibited an instrument he had invented for deobstructing the Fallopian tubes in cases of Sterility arising from their obstruction or occlusion, at the uterine extremities, by thickened mucus or other impediments. The instrument, in the use of which the speculum is always required, consists of a small silver catheter, bent like the male catheter, or the uterine sound, to adapt it to the curve formed by the uterus and vagina, and having a lateral curve at the distal extremity, pointing, when *in situ*, to the uterine mouth of the Fallopian canal. Through this catheter, a fine, flexible, whalebone bougie is passed into the Fallopian tube. When the small bougie is thus passed, so as to project at its Fallopian extremity, the instrument represents accurately the singular direction taken by the generative canal, from the mouth of the vagina to the fimbriated extremity of the tube. This novel operation proposes to bring an important organ under treatment, which has hitherto been removed from all interference.

With all respect for a deservedly esteemed authority, I do not consider the interference to be of a warrantable nature, and object to it on the following grounds. 1. On account of the difficulty, if not the impossibility, of the operation. I do not think that the reality of the performance can be affirmed, unless after performing the operation on the dead body, it should be found on examination, that the probe had really penetrated into the oviducts. 2. Because, should we even admit the possibility of the operation, its mere performance would be useless, for it would not modify the inflammatory condition of the lining membrane of the tubes, which causes them to secrete the glutinous substance, and thereby produces their temporary occlusion; whereas, if it were attempted to cauterize the oviducts, or inject them with different liquids, I consider the danger of the practice would far exceed the infirmity it is intended to alleviate. I am glad, however, to have induced Dr. Tyler Smith to bring his views on this subject, before the tribunal of the profession.

Gloucester Road, Hyde Park, May 1849.

CASES OF GOITRE; WITH OBSERVATIONS.

By S SCOTT ALISON, M.D., Licentiate of the Royal College of Physicians, London.

Case I. On the 19th January 1847, Ann Wilson, aged 19 years, unmarried, of pallid complexion and lymphatic temperament, and daughter of Mrs. W. (Case II), applied for advice for Goitre, at the Northern Dispensary. Menstruation had begun three years before, and though somewhat scanty, had been regular. The tumour (observed for the first time nine months before), extended from the larynx to the upper part of the sternum, and reached from the sterno-mastoid muscle of one side to that of the other. The swelling was doughy to the touch, soft, and uniform. A tonic appearing to be indicated, the infusion of gentian was prescribed: an ointment of the iodide of potassium was applied locally. On the 6th February, no material improvement having taken place in the tumour, a mixture containing iodide of iron was ordered. For the purpose of regulating the bowels, a few grains of the aloes and myrrh pill were prescribed. By the 9th of March, this treatment having effected no obvious change on the tumour, a long plaister of ammoniacum and mercury, spread on sheep-skin, about three inches in breadth, was procured. One end having been fixed at the back part of the neck, the plaster was brought round to the front and applied with gentle pressure over the tumour, then carried by the other side of the neck to the part already fixed, and applied upon it. No inconvenience, either in respect to respiration or to the circulation of the blood, was produced. The further use of the iron and pills was ordered. About a week after, the patient attended at the dispensary; she had been compelled to remove the plaster on the fifth day after its application, in consequence of a sense of itching in the part. The tumour was decidedly reduced in volume, the cuticle was desquamating freely, and the integuments were somewhat reddened. On the 16th March, the patient again presented herself at the dispensary. The house-surgeon, Mr. Dalton, was satisfied of the reduction in the size of the tumour, and another plaster was applied. Three days after, the patient came again, and complained of the irritation induced by the plaster; it was removed. The integuments were found sub-inflamed, and secreting serous fluid at several points. The tumour was decidedly still further reduced in volume. At this examination, a slight venous murmur was heard at the base of the right side of the neck; it was faint, but increased by gently pressing with the edge of the stethoscope, and by directing the chin to the opposite side, and upwards. No venous murmur could be heard on the opposite side of the neck, although every means were used to insure its detection if present.[1] The gums and the conjunctivæ

[1] In numerous examples of moderate anæmia, I have found the venous murmur confined to the right side of the neck. This suggests the propriety of not being satisfied with the examination of the left side only, in searching for this phenomena. I am disposed to refer this remarkable disparity, to the difference in the course of the venous trunks of the two sides. The vena innominata of the right side is almost vertical, while that of the left pursues an oblique course from above downwards, and from left to right. The vertical course of the right vena innominata is more favourable to the rapid descent of the blood, than the oblique course of the left, and rapidity of the circulation favours the vibration of the walls of the veins, and of the column of contained blood—the sources of venous murmur.

of the eyes were pallid; the urine was reported to be scanty, but clear; and the bowels, it was ascertained, were moved only in the course of two or three days. The continued use of iron was enjoined, and broad strips of soap cerate plaster, spread on leather, were applied in the same manner as the other plaster. Means were adopted to insure the efficient operation of the bowels. On the 26th of April, I saw the patient for the last time. The tumour was then greatly reduced in size, but by no means entirely gone; the venous murmur was still perceptible on the right side of the neck. The plasters were again ordered; the iron was omitted for a time, and replaced by decoction of cinchona, with dilute sulphuric acid. I have no later information regarding the patient.

Case II. Mrs. Wilson, about 45 years old, native of Yarmouth, came to London twenty-six years ago. She is the mother of the former patient. The patient was tall, of pallid complexion, and rather sickly. On the 19th January 1847, she applied for assistance on account of a swelling of the thyroid body; it made its appearance, for the first time, five years before, since which time it has gradually increased in size. The physical characters of the tumour were those of Goitre, but the volume of the growth was decidedly less than that of her daughter. No record has been preserved of the treatment or of the result.

Case III. April 7th, 1847. Louisa Ship, 15 years of age, a tall, fat girl, had an attack of typhus fever three years ago. A month after recovery, the thyroid body was discovered to be swollen. From that time, the swelling continued to increase, till some weeks previous to the above date. When first examined, the tumour was very considerable in size, and involved both lobes. It then extended from the larynx to the sternum, and was most voluminous at the lower part. It was soft throughout. Before menstruation, which took place for the first time six months before, and had since been regular, the tumour increased somewhat in volume, and partially subsided during the progress of the evacuation. This case was treated with iodide of iron, the regular administration of the aloes and myrrh pill, and with strips of plaster of ammoniacum and mercury, as in Case I. The result of the treatment was very satisfactory: in a short time, the tumour had undergone a very considerable reduction; no inconvenience whatever attended the use of the plaster. The record of this case extended over a short time only, so that I am unable to say what the ultimate result was; but everything promised that it would prove very favourable, if the treatment were duly persisted in.

Case IV. On the 23rd June 1847, Louisa Wilson, aged 18, cousin and niece respectively of patients 1 and 2, sought assistance on account of Goitre. She was a native of Yarmouth. Neither her mother nor sisters had suffered from swelling of the neck. She was delicate, short, pallid, and weak, and underwent much fatigue as a dress-maker. She menstruated every six weeks, and for six days each period. She complained of fulness of neck between the larynx and sternum, which began six months before. The thyroid body was decidedly, yet not very much enlarged. The tumour was soft, and doughy; a loud venous murmur was heard on each side of the neck; the patient vomited occasionally; and the bowels were constipated. The case was at first treated with the aloes and

myrrh pill, and with infusion of gentian in combination with tincture of hops. The general health improved much. The plaster of ammoniacum and mercury was employed, as described in Case I. The tumour was soon reduced in bulk; but, as happens frequently with dispensary patients, the young woman did not continue her attendance long enough to give an opportunity of judging of the success of the practice, or even to permit the administration of iron, which the irritable state of the stomach prevented at first.

Goitre appears to be rarely seen in London. The four cases described in this paper, comprise all that I have met with, in private and dispensary practice, during the nine years I have resided in the metropolis. This comparative immunity may be owing to substantial diet, to the use of malt and spirituous liquors, to the active habits of its inhabitants, and the free ventilation of most parts of the town and suburbs. I met with an example of swelling of the neck, which was brought to London for advice, as a case of Goitre, reported to be a disease of great prevalence in Roxburgh, the patient's native county. The patient was a weakly child of a clergyman. On examination, I found this so-called Goitre to be an indolent strumous abscess, which the point of the lancet reduced to very diminutive proportions in the course of a few minutes.

The four cases above described indicate that Goitre, at least as it appears in this country, is, for the most part, associated with general debility. In Cases I and IV, anæmia[1] was present, besides general debility; in Case II, there was pallor of complexion and debility to some extent; and in Case III, the immediate cause or precursor was typhus fever. The morbid growth, too, is deficient in vitality. The increased volume of the organ is not irreconcileable with this view, for it is not unusual for an organized part to be at once weak and hypertrophied. In the vegetable kingdom we have constant examples of fruits and roots attaining to an enormous bulk, yet displaying unmistakeable signs of weakness of structure. Nor is the occassional presence of pus, and other products of active and vigorous action, in the true Goitre, destructive to the view of the disease being one of local debility or weakened action, for it is not unusual for a growth, the result or the seat of impaired vitality, to become the subject of inflammation under the influence of certain exciting causes.

The disease is a local one, notwithstanding that it appears to be favoured in its rise and progress by certain general morbid conditions of the system, as already shown. In this respect, Goitre only resembles other local diseases. In my experience, chronic enlarged glands, in various parts of the body, have followed fever and other weakening diseases. Under the same circumstances, I have remarked the joints of children to become greatly enlarged. Besides certain general conditions, such as mere debility, anæmia, and the like, which assist in

[1] Dr. James Begbie, an eminent physician of Edinburgh, my esteemed friend and former master, has, in a valuable paper, published in a late number of the *Monthly Journal of the Medical Sciences*, called the attention of the profession to the relation of Goitre to Anæmia. The relation of the two diseases was prominently in my mind in 1847; one of the titles of two of the preceding cases in the index to my Note-Book being, "the alliance of Anæmia and Bronchocele."

the production and maintenance of Goitre, this disease is liable to be very commonly associated in Switzerland, with one of a very remarkable nature, *i. e.* the general hypertrophied, yet imperfect formation, and very lax, weak, and inactive condition of various structures of the body, including the brain and nervous system, known under the title of Cretinism. This general morbid condition does not appear to induce Goitre. Both diseases are of the same nature, the chief difference between them being this,—that in the first, the evil is general; in the latter it is confined to the thyroid body. The former is the disease in a general, the latter in a very restricted form. Hence it is, that Cretinism, for the most part, comprises Goitre, and that Goitre is frequently found alone.

Goitre is perhaps generally induced by the action of its immediate exciting causes upon the individual; but it is also one of those diseases which are frequently produced, without such direct instrumentality, by means of transmission from parent to offspring. At some former period, an ancestor has been exposed to its immediate causes, which have proved sufficiently powerful to induce a certain character of the thyroid gland, which is transmitted to a descendant as certainly as a mental quality, or any physical peculiarity or characteristic; and this character leads to the development of the disease under various circumstances, often in the absence of the noxious causes which had induced the disease in the progenitor.[1]

The treatment is divisible into local and constitutional. The most useful local treatment is pressure applied in a moderate degree, and with caution, so as to prevent any interference with the circulation. It may be effected in the manner described in Case I. The plaster should not be narrow, for it would then act as a ligature.[2] Obstructive disease of the heart, retarded circulation in the neck from any cause, the slightest tendency to head disease, and advanced age, should be regarded as contra-indicants. The old and tried remedy, iodine, is highly useful in promoting, like pressure, the absorption of the morbid growth. Mercury is likewise serviceable. Stimulants, such as ammoniacum, assist, by inducing a free action of the skin, of its perspiratory apparatus, and of its sebaceous follicles. The pressure, the iodine, the mercury, and the ammoniacum can all be comprised in the one form of a plaster!

The constitutional treatment requires the regulation of the secretions of the bowels, liver, kidneys, uterus, and skin, which are often much deranged. Fulness of the circulation from retained secretions, no less than comparative emptiness, from hæmorrhage or over-secretion, must be combated.

When the associated morbid general condition is anæmia, the preparations of iron are, of course, indicated. The iodide of iron is that which I have generally employed; it may be changed, however, from time to time. The valerianate of iron, composed of iron and vale-

[1] "The Relation of Hereditary Diseases to the General Sanitary Condition," was shown in two papers, which I contributed last year to the Health of Towns Magazine.

[2] The material, on which to spread the plaster, should be soft chamois leather. This will yield to the movements of the neck, and by its elasticity regain its position. It is almost invaluable as a soft, porous, retentive material for fomentations, cold lotions for the eye and head, and for many other purposes in the daily practice of medicine and surgery.

rianic acid, will be found serviceable in cases associated with hysterical symptoms, such as the globus hystericus, and other spasmodic affections.[1] After a time, chalybeates will be advantageously replaced, for a short period, by vegetable tonics and mineral acids. The most suitable of these, to alternate with the preparations of iron, are, in my opinion, the decoction of cinchona in combination with dilute sulphuric acid,—far more efficacious than sulphate of quinine; the infusion of gentian with this acid, or the hydrochloric; tannin, in doses of half a grain, dissolved in infusion of gentian and combined with nitric acid, a most efficient roborant combination, in this and many other diseases, including phthisis pulmonalis.

These vegetable tonics and mineral acids will likewise be found well adapted to cases of Goitre, associated with general debility, independent of anæmia. In such examples, requiring cordial treatment, the tinctures should be employed in preference to infusions; and when a nervine or composer is required, the tincture of hops will prove highly advantageous, either with or without the aromatic spirits of ammonia, as circumstances may indicate.

The regimen most suitable for cases of Goitre is well known, and therefore may be dismissed in a few words. It should embrace a substantial diet, regularity, and exercise in the open air. The place of residence, if infested with the disease, should be changed, if possible, for a locality with a dry soil, open country, and a pure invigorating atmosphere.

Park street, Grosvenor square, May 1849.

CLINICAL OBSERVATIONS.

By JOHN ROSE CORMACK, M.D. Edin., F.R.S.E., Fellow of the Royal College of Physicians of Edinburgh, and formerly one of the Physicians of the Royal Infirmary and Fever Hospitals of that City.

No. II.—CASES OF PUERPERAL CONVULSIONS: DEPENDENCE OF PUERPERAL CONVULSIONS ON TOXÆMIA: EXPLANATION OF THE MORE COMMON OCCURRENCE OF RENAL CONVULSIONS IN PRIMIPARÆ.

(Read before the Westminster Medical Society, May 12, 1849.)

In observations formerly made, on a Case of Scarlatinous Albuminous Nephritis,[2] it was stated that an albuminous condition of the urine was, *per se*, no sign of *structural renal disease*: that it indicated *congestion of the kidney*, and nothing more. I cited the experiments on rabbits made by Dr. George Robinson of Newcastle, and likewise a series of clinical facts, as amply establishing this important truth; and among other illustrations of toxæmia, caused by the congested kidneys being unable to eliminate excrementitious products from the blood, I mentioned the Convulsions of Pregnant Women.

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[1] Some years ago, when the valerianate of zinc was introduced into practice, I applied to Mr. Morson for a valerianate of iron. He kindly supplied me with a small quantity dissolved in spirit; which is still in good preservation.

[2] London Journal of Medicine, vol. for 1849, p. 451.

On the present occasion, I embrace the opportunity of pursuing this subject a little farther, and of endeavouring to show that Puerperal Convulsions are—though not always—yet generally the toxicological results of non-elimination of the excrement of the blood; and that in by far the largest number of cases, this non-elimination depends on renal congestion, caused by the pressure of the gravid uterus. When structural renal disease coexists with a gravid uterus, the *risk* of Puerperal Convulsions seems to amount almost to a *certainty*; as diseased kidneys are liable to have their functions disturbed by slight causes, and are specially disposed to congestion.

Albuminuria and dropsy are symptoms associated with Renal Puerperal Convulsions; and, independent of pregnancy, they have been proved to be sure signs of retardation of the flow of blood in the emulgent veins. The proofs are twofold. *First*, ligature of these vessels in the lower animals induces rapid renal congestion and albuminuria; and *secondly*, the records of Clinical Medicine inform us, that this condition of the urine, and likewise dropsy, are caused by aneurism, enlarged ovary, or any abdominal tumour, producing a similar, even though less perfect, mechanical impediment to the return of blood from the kidney. When we have albuminous urine, we have congestion of the kidney: when we have congestion of the kidney, we have its emunctory office inadequately performed; and whenever the insufficiency of renal depuration of the blood proceeds beyond a certain point, the blood becomes so poisonous as to act toxicologically on the brain. This, in passing it may be observed, is the explanation of the frequency of convulsions coming on in the course of Bright's disease. Slight causes may at any time excite such an increase in the congestion as to induce convulsions, stupor, or sudden death.

Dr. Tyler Smith has handled the subject of Puerperal Convulsions more philosophically than any preceding writer; but he appears to me to attribute them rather too sweepingly to irritation of the extremities of the nerves; and (while he recognizes their influence), to attach too little importance to direct toxæmic impressions on the nervous centres. With reference to the kidney, he remarks: "Irritation of the kidney has been known to excite epilepsy, and most probably it would act as a cause of Puerperal Convulsions. Lamotte and others have recorded cases of this kind. It is an old remark, that œdema of the face and neck forms a frequent premonitory attack; and Dr. Lever has made the interesting and important observation, that albuminuria is present in many instances. These points," continues Dr. Smith, "require farther examination, with special reference to the different modes in which spinal action may be excited."[1]

Excluding a case of delirium and convulsions occurring in an abortion during Scarlatina (and which is briefly noticed by Dr. Tyler Smith (p. 326) as having been seen by him, with me), two cases have recently occurred in my practice, or I may say *three*, because one of the patients had convulsions in two succeeding pregnancies. Both were married:

[1] Smith (Dr. Tyler) on Parturition; and the Principles and Practice of Obstetrics, p. 306. London: 1849. The reader is also referred to pp. 293-4, where Dr. Smith fully recognizes the influence of toxæmia as a centric cause of Convulsions.

and both were primiparæ. The case of abortion in Scarlatina is extremely interesting; but being a special one, I must defer its history, and the remarks suggested by it, to some other occasion.

Case I. On the 27th October 1846, at 11 P.M., I was called to Mrs. S., whom I had been previously engaged to attend. It was her first pregnancy; and she was at the full time. From her diminutive stature, narrow pelvis, and excessive abdominal bulk, I had been looking forward to the labour with some anxiety, and had requested that I might be sent for, as soon as the pains of parturition set in. On my arrival, I found that she had been in labour for two or three hours, and that the pains were severe, and coming on at intervals. On examining digitally the state of the os uteri, I found that there was no dilatation whatever. For four or five hours, the pains continued to recur at short intervals: she suffered extreme agony; and the abdominal muscles were called into energetic action: still, labour hardly advanced, and at 5 A.M. the os was not more dilated than to admit the point of the fore-finger. Till then, she had had no cerebral symptoms; but about that time, I was alarmed at observing incoherence in her conversation, and stertorous breathing during the short and disturbed slumbers, which at this period occupied the intervals between the pains. Between 5 and 6 A.M. a cathartic draught acted, which had been administered on my discovering, when I arrived, that the bowels had not been moved for two or three days. Immediately after the operation of the medicine, the countenance greatly improved. Dilatation of the os also seemed advancing. As the strength and spirits were good, I had resolved to wait a little longer without interfering: but events occurred, which prevented me from remaining entirely passive. The mouth became contorted; and she had, within half an hour, a succession of slight epileptic-like seizures, each succeeding attack increasing in severity. The full pulse, swollen countenance, and turgid cervical veins, coupled with the rigid condition of the os uteri, convinced me that the safety of the patient required immediate venesection. In these circumstances, about 8 A.M. I bled her from the arm; and administered a dose of tartar emetic. The bleeding was twice repeated, from twelve to fifteen ounces being taken on each occasion, and the nauseating effect of the antimony was kept up. The intentions of this treatment were threefold: *first*, to relieve the vascular system; *second*, to promote dilatation of the os uteri; and *third*, to moderate the expulsive action of the uterus and abdominal muscles, till such time as the passage should be somewhat relaxed. The convulsions slightly returned during each recurrence of the pains, but with one or two exceptions the spasms were chiefly confined (so far as I could observe), to the muscles of the abdomen and neck. The pulse upon one occasion, immediately before one of the first most severe seizures, was so low as 50; but when the convulsions had almost ceased, the pulse rose to 80, which it numbered at noon. At this time, the tartar emetic had been suspended for an hour, and the membranes could be easily felt protruding from the womb: they burst with a discharge of liquor amnii, of unusual abundance. After this, the pain caused by the pressure of the hand seemed agonizing, and the nervous excitement of the patient was great. A grain of solid opium was administered. From this time, everything went on well: and at 4 P.M. (after

a labour of twenty hours) a living child was born. The head was strangely elongated: but in a few days there was nothing unusual to be seen in its shape. The placenta was removed by the hand without difficulty about 5 P.M., and another opiate administered. The patient had a long and refreshing sleep; and, till this day, has had no return of convulsions. She went on favourably for three days, when she was seized with phlegmasia dolens, which made her recovery tedious, though it was ultimately complete. This patient was œdematous in the face and hands and ankles, during the latter months of pregnancy: but unfortunately, the urine was not examined before, during, or after labour.

CASE II. Mrs. H., a married woman, aged 18, muscular, plethoric, of rather short stature, with abundant black hair, and reported to have been always very ruddy when in her usual health. At 9 A.M. on the 5th August 1848, I was hurriedly sent for to see this patient, who, I was informed, was in the commencement of the seventh month of her first pregnancy. I found her in a state of insensibility, and emerging from an attack of convulsions, which, from the account I received, must have been tolerably severe. The os uteri was not dilated to any extent. She had been seen by my assistant two hours previously, at which time she had had no convulsive attack, but complained of pain in the head, noise in the ears, and dimness of vision. The members of her family had observed, on the preceding evening, a wildness in her expressions, and something approaching to delirium. Cold to the head, and a brisk cathartic, had been ordered before I saw the patient: but only the first part of the prescription had been attended to. As the bowels were reported by those in attendance to be confined, as the draught had not operated, and as the jaws were so firmly clenched as not to admit of anything being got into the mouth, I directed a cathartic enema to be administered immediately, ordered the feet, which were very cold, to be wrapped up in moist hot flannels, and an evaporating lotion for the head, which was very hot, to be diligently used till I returned. The limbs, chest, and abdomen, were of a natural temperature. At this my first visit, the pulse was full, very slow, (not above 50, I think,) and occasionally intermitting; the tongue was dry, and thickly coated with a yellowish fur. During my visit, consciousness returned, though her ideas remained confused, and many of her answers to questions were incoherent. She complained of a soreness of the tongue, gums, and inside of the mouth. Her chief complaint, however, was of backache, and pain in the abdomen, which latter was increased on pressure. She complained of intense headache, and much mental bewilderment. After the convulsions had entirely subsided, I observed that the superficial veins in all parts of the body, but especially those in the head, neck, and arms, still remained very turgid. There seemed to be slight general anasarca: at all events, there was well marked œdema under the eyes, at the wrists, and at the ankles. The marriage ring on her finger, from its narrowness, seemed imbedded in the flesh. It was this which first drew my attention to her œdematous condition, which might otherwise, as regarded the countenance, have passed with me for extreme plumpness, as, from not having before seen the patient, I was unacquainted with her natural appearance.

I was obliged to be absent from 10 till 12. On returning, I found

her in strong convulsions. She lay on her back, in a rigid state, with the head thrown backwards, the face distorted, the mouth foaming, and the breath hissing fitfully through the apertures of the clenched teeth. The muscles of the arms, legs, and abdomen, were in a state of tetanic rigidity, with transient intervals of very partial and slight relaxation. The spasmodic movements of the neck and face were more active and varied. After remaining some time in this state, she struggled violently, sat up, and tore her bed-clothes and dress with her teeth and hands. At this time, or rather just as this active state was abating, the muscles of the abdomen were seen as the painter and the sculptor strive to represent them, when they wish to pourtray extreme athletic tension. On repeating the digital examination, there was still found to be no dilatation of the os uteri. The enema had not been administered, in consequence of the violent resistance of the patient, and the want of tact, or the timidity, of those in attendance. I therefore ordered it to be given immediately; and waited in the house till the bowels had been relieved by it. After a very abundant evacuation of black, hard, and fœtid fæces, the patient became decidedly more natural in appearance: and I left her about 1 P.M. pretty tranquil, almost asleep, and quite free from any convulsive affection. When I returned at 2 P.M. she was asleep; and I was told that she had continued in this state since I had gone away: that at first she had seemed easy, and breathed freely, but that she had gradually become restless, flushed in the face, had shrieked suddenly several times, and had, just before I entered, attempted to get out of bed. Her face was of a deep red, or almost purple colour, her breathing was stertorous, and there was great turgidity of the external vessels of the head and neck. There was slight twitching at the angles of the mouth. I attempted to rouse her by laying my hand on the shoulder, and then gently shaking her: when, immediately—but whether in consequence of, or simply coincident with, this movement of her body, I cannot say—she became seized with violent convulsions, the paroxysm differing in no respect from the aspect of a severe fit of epilepsy. Everything had been already prepared for performing venesection; so I at once opened a vein in the arm. The blood flowed in a full and rapid though unsteady stream: and whilst it flowed, the patient was held with the head and shoulders raised by several attendants. The turgidity of the veins of the head and neck soon abated; and the convulsions, though very frightful during the whole time of the bleeding, had notably diminished in severity before its conclusion. From the condition of the patient, some of the blood was dispersed over the bed and the apartment; but I think the quantity taken was not less, and perhaps a little more, than twenty fluid ounces, apothecaries' measure. The bleeding seemed greatly to relieve the embarrassed respiration, and to diminish the stupor; but the convulsions, though decidedly less severe, and of a less apoplectic aspect, continued to recur about once every hour till 9 P.M. The first symptom of a coming convulsion was raising her hand to the head, turning up the eyes, and before some of the seizures, in addition to these threatening signs, she shrieked. After the bleeding, I had ordered an antispasmodic mixture, containing opium, valerian, and assafœtida, to be regularly taken at short intervals, but, as I can testify from the trials which I made myself, it was quite impossible, without causing dangerous excitement,

to make any forcible or even persuasive attempt, to get her to swallow a dose of this or any other medicine. When apparently conscious of what she was doing, she was violent, reckless, and obstinate in her behaviour,—in fact, maniacal. The vein was re-opened, and about ten ounces of blood allowed to flow; and a turpentine enema was also administered, which produced a copious motion, similar in character to the former. These measures were adopted about 7 P.M.; and, an hour afterwards, a starch enema, containing a drachm and a half of the Edinburgh College solution of the muriate of morphia,[1] was administered. At 9 P.M., there was a little dilatation of the os uteri; she was quite calm: and when I examined the abdomen with the stethoscope, there was not the slightest muscular spasm. I could not detect the sounds of the fœtal heart, and from the patient's statements, along with this negative evidence, I announced my belief that the fœtus was probably dead, and that any operative interference, which might be required for the mother's safety, ought not be objected to, from the hope of a living child being ultimately born. Between 9 and 10, when I left her, she seemed disposed to sleep, breathed easily, and was perspiring. I gave instructions to the attendants to administer the mixture formerly prescribed; and to send for me, if the convulsions returned, or if labour seemed to be advancing. To my surprise, I was not sent for during the night. It may here be stated, that hardly any urine was passed by the patient, during the twelve hours that I was in pretty close attendance upon her; and it was averred by her, that she had not made any for many hours before her seizure. For some days before that time, it was more abundant than natural. As to these facts, however, there was some ambiguity in the evidence. The important point, as regards the urine, is this—that what she passed (about two ounces) when I was with her, was found intensely albuminous, when treated by heat and nitric acid. The blood, especially that taken at the first bleeding, was cupped and buffed.

6th August. At 7 A.M., I found her in a quiet sleep: and was told that she had passed a tranquil night. Two doses of the antispasmodic mixture had been taken. The pulse was 74; and the skin moist. In the evening, she continued as well as in the morning. During the day, she took some beef-tea, and one or two doses of the mixture. There were some slight pains during my second visit, and an examination was then made, by which it was discovered that the os uteri was a little more dilated.

7th August. During this day, she continued in a comfortable and tranquil state, and sat up for some hours in the evening. When questioned as to her feelings, she said that she had some headache, and occasional pain in the back and abdomen. The os uteri was sufficiently dilated to admit the point of the fore finger. There was no preter-

[1] The following is the formula for this preparation. Take of Muriate of Morphia, one drachm and a half; Rectified Spirit, five fluid ounces; Distilled Water, fifteen fluid ounces. Mix the spirit and the water, and dissolve the muriate of morphia in the mixture with the aid of a gentle heat.

The uniformity of strength makes it preferable to the Tincture of Opium, when large doses are given, and may have to be repeated. The London Pharmacopœia contains no officinal formula for prescribing the muriate or acetate of morphia, which is an inconvenient omission; but it gives instructions for preparing the salts, which are of no practical value to the physician or the pharmaceutist, and which the manufacturer would be sorry to take as his guides.

natural heat of the part, and the digital examination caused no pain. No medicine was prescribed or taken. She had two copious motions of an improved appearance. The urine was abundant, and was very slightly albuminous.

8th August. In the afternoon, when I called, the report of her state since my last visit was favourable. Her countenance was natural: but she complained of pain in the back, and also of headache. The urine was not chemically examined; it was sufficient in quantity: but the bowels had not again been moved. The breasts, which all along had been somewhat turgid, were now painfully so: they were hard, knotty, and painful to the touch, and a milky fluid exuded from them in such abundance, as to require frequent change of linen. A dose of sulphate of magnesia was prescribed; and an hour after it had been taken, a draught of henbane and valerian.

9th, 10th, and 11th, August. The urine was very slightly albuminous. During these days, the state of the mammæ was the only troublesome symptom. This was treated by gentle frictions, fomentations with poppies when the pain and tension were great, and by doses of sulphate of magnesia and tartar emetic, so as to keep up a watery discharge from the bowels. When she lay down, the headache returned, for which reason she was up and dressed the greater part of these three days. As she was up when I called, there was no digital examination made.

12th August. During the night (between the *11th* and *12th*) she had some slight convulsive attacks, and during the day, several of great severity. Her condition was so alarming, that I could not leave her even for a short time without anxiety; and during my short necessary absences, my assistant remained with her. She had convulsive attacks with the same periodic regularity, as the pains in ordinary labour; and though she was generally insensible, it was evident that with each fit the uterus was becoming dilated, and was actively engaged in the process of expulsion. Though considerable progress was being made, yet from the great remaining rigidity of the os uteri, and the apoplectic aspect of the patient during the convulsions, I repeated the bleeding to the extent of about six ounces; and resolved, whenever the os uteri became a little more dilated, to perforate the head and extract the fœtus. After the bleeding, however, the dilatation proceeded rapidly, and the convulsions greatly moderated; and though anxiously watching, I did not farther interfere. At 6 P.M., a dead fœtus was born, without her having had, from the very first, what could be called labour pains; for her state throughout was generally one of insensibility, and the expulsive process went on steadily during each fit of Convulsions, which recurred in as regular paroxysms as ordinary labour pains. She made a complete and rapid recovery. Within a week, she was going about as if nothing had occurred to her. Her feelings of comfort were such, that all my cautions were thrown away; fortunately, no bad consequences resulted from the little care which she took of herself. I discontinued my attendance about the end of August.

Very soon afterwards, she became pregnant; and, in consequence, was much harassed with headache, nausea, and vomiting. I did not, however, see her again professionally, till the 21st of January 1849, when I was, as on the first occasion, hurriedly sent for. I was told that she

had just come out of a severe convulsive attack, similar to those from which she had formerly suffered. I found her not convulsed, but in a state of stupor, from which, however, she emerged speedily, though she continued in a somewhat stupid and bewildered state. The os uteri was soft, and dilated to nearly the size of a shilling. From this state of the womb, the regular recurrence of labour pains, (or rather of uterine contraction accompanied by convulsions,) and the absence of the alarming apoplectic symptoms which had characterized the convulsions which occurred in her first pregnancy, I thought that abortion would occur sufficiently soon to put the patient out of danger, and obviate the necessity for active treatment. After sufficient purging, anodynes were freely given. My prognosis, as to the speedy occurrence of abortion, proved erroneous; for the uterine contractions and the Convulsions both subsided within twelve hours, the patient got quite well, went about with her dilated uterus, and did not miscarry for two months. Abortion took place on the 23rd of March. From the 22nd of January to the 20th of March, she enjoyed tolerable health, and had no recurrence of the convulsions. When she allowed a day to elapse without going to stool, she suffered from headache and giddiness, but a little care in regulating the bowels obviated these unpleasant symptoms. On the 20th, labour pains set in, and continued, with longer or shorter remissions, till a dead fœtus, of apparently between the 6th and 7th month, was expelled on the 23rd of March, without much suffering, and without the recurrence of convulsions. After the abortion, she made a speedy and complete recovery; and has since enjoyed good health.

Remarks. The observations which follow, though suggested by the preceding cases, apply, in a great measure, to the subject of Puerperal Convulsions generally. It has long been familiarly known to practical obstetricians, that convulsions are to be dreaded in women who have become œdematous during pregnancy; but till very lately the meaning of the sign was not attended to, and even yet has not been fully appreciated. In a work on Obstetrics, published in America during the present year, Dr. Meigs, in speaking of *œdema gravidarum*, says:—"It is proper to remark, that women, who are very much swelled, are to be deemed far more liable to Puerperal Convulsions, than such as have no swellings; for these infiltrations, produced by pressure on the ascending venous columns, suffer a similar pressure under the descending arterial columns of blood; which gives cephalic engorgement. Good care should be taken to obviate such dreadful attacks. To be forewarned, is to be forearmed."[1] It would be strictly correct to go farther than Dr. Meigs, and to say, that Puerperal Convulsions very rarely occur in women who are not œdematous to a greater or less extent. It would likewise be true to say, that, along with the dropsy, there exists an albuminous condition of the urine. Many women have slight œdema and albuminuria, and some have both to a considerable extent, and yet escape convulsions; but, if we exclude hysterical convulsions, and convulsions from anæmic affections, which are not peculiar to the puerperal state, very few, if any, of those affected with true *eclampsia gravidarum*, are

[1] Meigs (Dr. Charles D.), Obstetrics; the Science and the Art, p. 300. Philadelphia; 1849.

not the subjects of anasarcous effusion and albuminuria. Attention was, I think, first directed to the coincidence of albuminuria with Puerperal Convulsions by Dr. John Lever. He announced the fact, that in nine out of ten cases, in which he had examined the urine, it was found to be albuminous.[1] Drs. Devilliers and Regnault, in a valuable memoir on the Dropsy of Pregnant Women (published during the past and present years in the *Archives Générales de Médecine*), declare, as a remarkable and essential fact, that "chez *toutes* les femmes éclamptiques, on trouve de l'albumine dans les urines. Cette régle ne nous a pas encore paru souffrir d'exceptions."[2] If it be a fact, then, that albuminous urine and anasarca—the characteristic signs of congested kidney—be so common in Puerperal Convulsions, as to be regarded, by the best and most recent authorities, as their constant concomitants, it may, I think, be very safely inferred, that the renal congestion is the cause of the convulsions; or, to be more explicative and precise—that the convulsions are direct toxicological effects on the nervous centres, produced by poisonous substances which the unembarrassed kidney could throw off with the urine, but which the congested kidney cannot excrete. In pregnant women, blood-poisoning exists far more commonly than is generally believed. There is a series of phenomena resulting from different degrees of toxæmia—such as nausea, vomiting, coma, delirium, convulsions, and mania—which may, on a subsequent occasion, form, either separately or collectively, the subject of another paper.

It is important to remember, that the gravid uterus, or other tumour, pressing on the renal veins, or in any way seriously impeding the return of blood from the kidneys, must induce, more or less, inability on their part to perform their emunctory office; and, when the pressure is great, a consequent condition of toxæmia. It must also be remembered, that the maternal blood, during utero-gestation, notwithstanding the demands made on it for phosphate of lime, etc., by the fœtus, requires, in some respects, an extra degree of depuration, and that, therefore, the pregnant woman can very ill bear an impediment to the free return of blood from the kidney. She probably requires, for her preservation in health, to throw out a large additional amount of excrementitious matter from her blood, as it is charged with the matter depurating from the fœtus, in addition to the ordinary depuration essential to her maintenance in health in the non-pregnant state. The elements of the milk also require, during utero-gestation, to be thrown off by the kidneys; and "kiestein," which may generally be found in the urine after the second month of pregnancy, is presumptive evidence that this depuration is going on; for Dr. Golding Bird, Dr. Peddie, and others, have shown that this product contains some of the elements of the milk.[3] Dr. Golding Bird says:—"the imperfectly formed secretion of milk, not

[1] Lever (Dr. John), in Guy's Hosp. Rep., *Second Series*, p. 495. London: October 1843.

[2] Devilliers et Regnault, Archives Gén. de Médecine, 4me Serie, t. xvii, p. 295. Paris: Juin, 1848.

[3] Peddie (Dr. Alexander), on the Mammary Secretion, in Edinburgh Monthly Journal of Med. Science, Aug. 1848. He says:—"With the aid of the microscope, I have fully satisfied myself that this product (kiestein) contains some of the elements of the milk." This observation of Dr. Peddie may be doubted by some, because kiestein has been found in the urine of non-pregnant women, and even in the urine of men. Its presence indicates that a species of depuration is going on, but with the nature of it, we are not yet fully acquainted.

having a ready exit by the mammæ, is taken up into the circulating mass, is separated by the kidneys, and eventually escapes from the body by the urine."[1] Many of the distressing symptoms, which so often attend pregnancy ought, I think, to be considered as resulting from toxæmia, dependent on defective sanguineous depuration, and treated accordingly. I must not be understood as saying that diminished renal elimination is the only cause. The skin, the lungs, the liver, or the kidneys, may one or all be in fault: but, from the pressure of the gravid uterus, the latter run the greatest risk of having their functions impaired. If the kidneys be embarrassed from the congestion caused by the gravid uterus, urea will remain in the blood, and likewise the elements of the milk. The non-elimination of the lacteal elements is much less dangerous than the retention of carbonic acid in the lungs, or of the poisonous principles of the bile and urine; as the former, being oleaginous, saccharine, and albuminous, are not very dissimilar to the constituents of the blood. Milk fever, however, which ought to be regarded as truly a poison-disease, is sometimes pretty severe, if active derivative treatment be not adopted. The state of the mammæ in the case of Mrs. H. merits special notice. In her, most probably, the elements of the milk were not adequately got rid of by the kidneys.

The Convulsions occurring to virgins and others at the menstrual period, commonly known by the name of Uterine Epilepsy, are often reflex phenomena, but they may in many cases depend on toxæmia sometimes acting as a predisposing, and at other times as a centric and direct, cause: for the poisonous nature of menstrual blood, and its highly carbonized constitution, is believed in by physicians and chemists.

The same remarks apply much more strongly to the lochial discharge. Its suppression, like that of the menses, may induce attacks of Uterine Epilepsy, or, to use the other name, Puerperal Convulsions. In such cases of post-partum Puerperal Convulsions, should no structural disease of the kidney exist, the urine is not likely to be albuminous, nor the surface œdematous: but I am inclined to think, from cases which have occurred under my own observation, that anasarca is present in a large proportion of those cases in which convulsions occur from suppressed menses.[2] In such circumstances, I have seen anasarca, albuminous urine, and lethargy, which were soon relieved by purging: more serious results being probably averted by this treatment. There must have existed renal congestion.

It generally happens that when the uterus is emptied, the convulsions cease: and they seldom recur after delivery. When they do recur, we must suspect an insufficiency in the lochial secretion, or structural renal disease. The explanation of delivery generally arresting the Convulsions, is not so much that the uterine irritation is lessened, as that the kidneys are relieved from their hyperæmic condition, and thus become enabled to resume the proper exercise of their function.

By adopting this view, we obtain an EXPLANATION OF THE MUCH GREATER FREQUENCY OF PUERPERAL CONVULSIONS IN PRIMIPARÆ.

[1] BIRD (Dr. Golding), in Guy's Hospital Reports, April 1840.

[2] I have published cases of Convulsions and Mania *from suppression* of the catamenia, in an Essay on Transient Insanity, in the Edinburgh Monthly Journal of Medical Science, p. 903, vol. for 1843. The cases in that paper might have been correctly considered as illustrations of toxæmia.

The individuals most commonly the subjects of Puerperal Convulsions are strong healthy young women, pregnant for the first time: that is to say, a class of patients in whom the abdominal walls are the most unyielding, and least able to relax under the pressure of the expanding womb. Dr. Collins says that "Puerperal Convulsions occur almost invariably in strong plethoric young women with their first children, more especially in such as are of a coarse thick make, with short thick necks"; and "in thirty cases which occurred during his mastership, twenty-nine were in women with their first children; and the other single case was a second pregnancy, but in a woman who had suffered a similar attack with her first child."[1] Some of the particulars of this case are detailed by Dr. Collins. Convulsions occurred after as well as during labour, which leads us to suppose that the toxæmia did not depend mainly, or at least not entirely, on renal causes. The patient may, however, have been the subject of such structural renal disease as to facilitate the production of dangerous congestion, or she may have had some ovarian or other tumour causing like tendencies. The uterine excitement may also undoubtedly, in some cases, be the immediate cause of exciting Convulsions in those in whom toxæmia pre-existed, though remaining latent as to its effects, being only of sufficient intensity to operate as a predisposing cause. Dr. Joseph Clarke mentions nineteen cases of Puerperal Convulsions, of which number sixteen occurred in primiparæ.[2] Dr. S. Merriman met with forty-eight cases, and thirty of them were in primiparæ.[3] Dr. Lever, in his paper already referred to, notices that eight out of his fourteen cases were in first pregnancies. It would be interesting to know how many of the eight had ever gone to the full time, as well as other particulars with which we are not furnished. Chailly observed thirteen cases at La Clinique of Paris, of whom nine were in primiparæ: Dr. Johns, quoting from the ward-book of the Dublin Lying-in Hospital for a period of two years, mentions that of nine women who had convulsions, and twelve who were threatened with them, all except two were pregnant for the first time. These two had had convulsions in previous labours. It is to be regretted that many of the most esteemed authors, in giving their experience in this class of cases, do not state how many occurred in first births: but the above accounts being taken without selection from such works as I have access to, may be considered as probably a fair view of this question in obstetric statistics. It is not perhaps necessary to multiply citations of this kind, as the fact of primiparous women being the most subject to Convulsions is generally recognized: but I may just add, that I am now, as leisure admits, engaged in an analysis of all the reported cases of Puerperal Convulsions, and find that as the number of cases augments, so, in like proportion, is the augmentation in those which were first pregnancies. At present the following tabular recapitulation may suffice:

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[1] Collins (Dr. Robert). Practical Treatise on Midwifery, containing the result of 16,654 births which occurred in the Dublin Lying-in Hospital, p. 201. London: 1834.

[2] Collins. Op. cit. p. 200.

[3] Merriman (Dr. Samuel). Synopsis of the Various Kinds of Difficult Parturition. New Edition, p. 148. London: 1838.

By whom observed.	First Pregnancies	Subsequent Pregnancies	Total cases.	Whence quoted.
Collins.....	29	1	30	Collins, op. cit. p. 201.
Clarke.....	16	3	19	Collins, op. cit. p. 200.
Merriman	36	12	48	Merriman, op. cit. p. 148.
Lever	8	6	14	Guy's Hosp. Rep. 1843.
Chailly	9	4	13	Chailly, by Bedford, p. 265.
Johns	19	2	21	Dub. Journal, Sept. 1843.
Total..	117	28	145	

In primiparous women there is—as a general rule—a greater tenseness and rigidity of the abdominal parietes; and therefore in them the gravid uterus is much more apt, by its inward pressure, to cause dangerous renal congestion. *This obviously explains why primiparæ are the most liable to Puerperal Convulsions;* and why Convulsions in them are chiefly of a renal, and therefore of a severe and epileptoid character. It is probable that in them albuminuria is associated with the œdema of the face and upper part of the body, which is sometimes seen in many of them who escape Convulsions: for it must be remembered that *the albuminuria and œdema are simply signs of congested kidney*, and that congestion may exist—and indeed often does exist—to an extent quite sufficient to cause these phenomena, and yet be inadequate to produce toxæmia of sufficient intensity to cause Convulsions.

The frequent omission of details renders it impossible to make a complete analysis of the history of those cases in which convulsions occurred in subsequent pregnancies: but the result of my inquiry is, that all the fully reported cases which in their mere numerical aspect limit the rule, on a scrutiny tend to establish it. These cases may be considered as chiefly toxæmic, but some are non-toxæmic. Those of toxæmic origin may all be classed under four heads, viz.: 1. Persons who, though previously pregnant, had never gone to the full time, and in whom, therefore, there had been no relaxing of the abdominal walls. 2. Persons of extreme muscular development, whose rigid fibres do not readily yield to the augmenting womb. 3. Persons who, from organic changes in the structures of the kidney, cannot adequately perform renal depuration of the blood; among whom may be included—those suffering from granular or other structural disease of the kidneys; or who have some congenital anatomical peculiarity in these organs;[1] or in whom some morbid growth presses on the emulgent veins, or, indirectly by its presence, impedes the free flow of blood through these vessels. 4. Excessive volume of uterine tumour, including plural pregnancies, and cases of superabundant liquor amnii.

[1] This remark brings to my recollection a remarkable case, of which the following brief outline is given by Dr. ROBERT LEE, at p. 112 of his Clinical Midwifery. "A young woman, in the sixth month of her second pregnancy, died of chorea, on the 29th August 1840, in St. George's Hospital. The symptoms were at first slight, and were apparently produced by fright. The convulsive movements became so violent, that it was found necessary to put on a strait waistcoat, and fix her down to the bed. Forty-seven hours before death, the contents of the uterus were expelled. The brain and spinal marrow were perfectly healthy. There were some small vegetations in the mitral valves; the right kidney and ureter were wanting; the supra renal capsule was present. The uterus was in a natural state. The corpus luteum was unusually small, and the coats of the Graafian vesicle could scarcely be seen within the yellow matter."

The *first* class is very numerous; and embraces the second attack of my patient, Mrs. H.

The *second* class seems also to include a number of cases.

The *third* class is not numerous: but it is important, when we recollect how often, in the course of Bright's disease, when we have greatly relieved the head symptoms, and reduced the œdema and albuminuria by derivative treatment, Convulsions or death abruptly occur from exposure to cold, from some error in diet, or other accidental cause. In such instances the coagulability of the urine returns to its greater degree of intensity. It is quite plain that a pregnant woman labouring under Bright's disease, even in an early stage, must in this way run a tenfold risk of Convulsions. If she have an ovarian tumour, or any other mechanical predisposing cause to renal congestion besides the gravid uterus, her risks will also be great. In her, too, delivery will hardly bring exemption from the danger of toxæmia from renal non-elimination. Dr. Simpson said, in 1843,[1] that he had been accustomed to teach in his Lectures, that "patients attacked with Puerperal Convulsions had almost invariably albuminous urine, and some accompanying or rather preceding dropsical complications, *and hence probably granular renal disease.*" This latter remark of Dr. Simpson, with deference to so high an authority, I must dissent from. Under proper management, the majority of those affected with Puerperal Convulsions quickly and perfectly recover, and in future pregnancies are very rarely affected. Undoubtedly, women who have structural disease of the kidneys are pre-eminently liable to renal congestion and consequent toxæmia: but then œdema, albuminuria, and Convulsions, are not in the Puerperal woman pathognomonic of any organic disease of the kidney, though in the *fatal* cases we may expect them to be often present. Dr. Simpson's cases, to which I formerly referred, are interesting in this point of view. In three fatal cases of Puerperal Convulsions, he found on dissection a great amount of renal disorganization. Albumen was looked for in the urine during life, but was not found.[2]

The *fourth* class of cases is interesting. More accurate statistics, than those yet given by authors, are required, before we can do more than state generally that a bulky uterine tumour predisposes to Convulsions: and that in some its presence may render a subsequent pregnancy as liable to them and in the same way, as the rigid parietes of a primiparæ. The facts which best illustrate this position, are such as the following:—Dr. Collins, in 240 cases of twins, had three cases of Convulsions: and in his grand total of 16,654 labours, he had only thirty cases of Convulsions; hence, in twin cases there occurred 1·25 per cent., and in single pregnancies 0.18 only per cent. Two of Dr. Merriman's 48 cases of Puerperal Convulsions were twin cases; and so were two of the 13 cases reported by Chailly. It is to be regretted, that Drs. Merriman and Chailly do not give the total number of labours, in which these cases occurred. With regard to some of the Convulsions which occur after delivery, it must be borne in mind, that they are not toxæmic, but truly

[1] Edinburgh Monthly Journal, Nov. 1843, p. 1015.

[2] London Journal of Medicine for last month, p. 453; and Edinburgh Monthly Journal for September 1847, p. 212.

anæmic; and in some of the twin cases in which there was much hæmorrhage, want of blood seems to have been the cause of spasm.

Some authors have explained the fact of the *unmarried being more subject than the married to Puerperal Convulsions*, by assuming, that in the former, greater emotional causes are present. Another explanation, however, is more in accordance with the series of facts now brought forward. Allowing that emotion may often, both in the married and unmarried, be concerned as an accessory cause; and granting that it may even sometimes be the proximate cause of exciting Convulsions, through the medium of a brain[1] already in an apt state to be so influenced, in consequence of the action of previous toxæmia; yet, as regards those who have become pregnant out of wedlock, it seems natural to infer, that the tight girding of the abdomen, which they so often practise to such an extraordinary extent, to conceal their shame, may act most powerfully, in producing extreme congestion of the kidney and consequent intense toxæmia.

Death of the fœtus in Mrs. H. seemed, in both pregnancies, to precede the attacks of Convulsions. This observation is important, because when this event takes place, there is inevitable toxæmia, which may be looked on as nature administering a poison for the purpose of accomplishing abortion. If the fœtus die, the matters which were being taken out of the mother's blood for its growth, suddenly cease to be required: and the depuration by the fœtus also ceases.[2] In these circumstances there must, I think, be more or less toxæmia. When the supply of material for the fœtus from the uterine vessels of the mother suddenly terminates, by its birth at the full time, the lochial discharge comes to her relief, and so long as it is in sufficient abundance, she has small hazard of toxæmia. That to preserve from toxæmia is the use of the lochial discharge cannot be doubted, when we contemplate the phenomena which arise when it is scanty or suppressed; and when we see that in most instances in which women who do not nurse their infants and yet enjoy good health, it continues to flow for six weeks in place of ten or fourteen days. When Convulsions occur or recur after delivery, the toxæmia most probably arises from imperfect excretion or complete suppression of the lochia: but it may also depend on the kidney being congested from structural disease in itself, or from pressure on the veins caused by the morbid enlargement of some neighbouring part.

It must be borne in mind, that though the puerperal woman is liable to Convulsions from special causes, she is also subject to them from others which act on persons who are not gravid; though from some convulsive attacks, *e. g.* epilepsy, she seems very frequently to be respited, in virtue of her pregnancy. The following arrangement of Convulsive affections, with reference to their causes, as they occur both in the Puerperal and Non-puerperal states, seems to be correct and convenient.

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[1] The brain, properly so called, can, we suppose, have, in any circumstances, but an indirect share in causing convulsions, which depend on the spinal column and medulla oblongata. The acephalous fœtus generally dies of convulsions.

[2] The meconium with which the bowels are distended at birth, and the urine found in the bladder, are clear proofs of active fœtal depuration. If the fœtus performed no blood-moulding for itself, it would not contain within it deposits of excrement, nor would it be so liable to diseases similar to those of extra-uterine life.

ALL CONVULSIONS ARISE FROM

1. Toxæmia,
2. Anæmia,
3. Hyperæmia, or } acting directly on the spinal column and medulla oblongata.

4. Irritation of the extremities of the nerves, } acting in a reflex manner on the spinal column and medulla oblongata.

The sources of toxæmia causing convulsions are very various. They may be thus succinctly arranged.

SOURCES OF TOXÆMIA CAUSING CONVULSIONS.

I. Defective Depuration of the Blood.
1. Non-evolution of carbonic acid, etc. by the lungs.
2. Non-elimination of the principles of the bile from the blood.
3. Non-elimination of the principles of the urine from the blood.
4. Non-elimination of urea, etc. by the skin.[1]
5. Non-elimination of accidental effete matters from the blood, by the kidneys and other emunctories.

II. Introduction of Foreign Matter into the Blood.
1. Inorganic poisons, such as acetate of lead, etc.
2. Organic poisons, such as strychnia, etc.
3. Morbid poisons, such as scarlatina, etc.

While the pregnant woman is not exempt from any of the above causes of toxæmia, she is specially in danger from those comprised under the third and fifth divisions of the first head: viz. non-elimination of the principles of the urine by the kidney; and non-elimination of accidental effete matters from the blood by the kidneys and other emunctories. While admitting the importance of every emunctory to the puerperal woman, it may still be correctly stated, that all

Toxæmic Puerperal Convulsions are mainly
1. Renal, or
2. Lochial:

or they may partake of both, along with other, characters. The chief object of the present paper is to point out the importance of the former: but in doing so, I wish explicitly to mention defective elimination from any organ as a cause of more or less toxæmia: and also to recognize non-toxæmic causes of Puerperal Convulsions.

1. Renal Puerperal Convulsions. The following diagram shows how pregnancy of itself may cause Renal Convulsions:

PREGNANCY
CAUSES

Increased necessity for Renal Depuration of Blood.

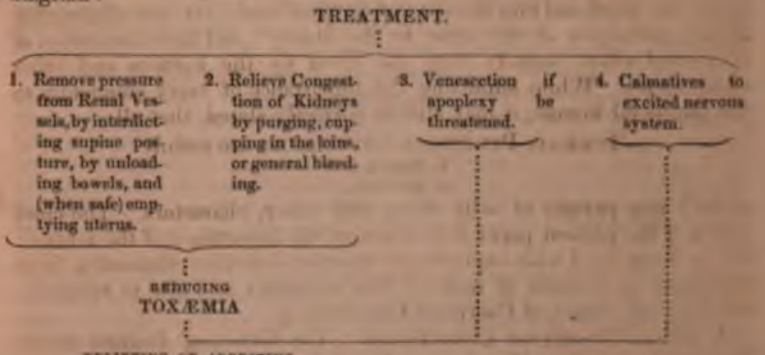
A tumour (gravid uterus) causing renal congestion, which
CAUSES
Non-elimination of poisonous excrement from blood:—
TOXÆMIA,
WHICH CAUSES
Action on Brain, Spinal Marrow, and Medulla Oblongata,
HENCE RESULT,
CONVULSIONS.

[1] Landerer has shewn that urea is normally excreted by the skin. (Dr. Garrod's Lectures in *Lancet*, vol. ii, 1848, p. 653.) It is very important to bear this in mind, for it shows that

The existence of organic disease of the kidney greatly augments the risk of Renal Convulsions during the Puerperal state. And as was formerly stated, the continuance of the pressure of the gravid uterus after the death of the fœtus, must be specially apt to induce toxæmia; for if the elements for the nutrition of the fœtus suddenly cease to be required, the maternal blood must for a time be charged with superfluous and foreign matter.

The *Prophylaxis* of Renal Puerperal Convulsions must evidently embrace an avoidance of too long continuance in the supine position; an easy corset, giving free play to the lungs, and not pressing back the womb; moderate exercise; regularity and sufficiency of the alvine evacuations, and a good state of the skin. Mental excitement must also be avoided, as it might, even with a moderately poisoned state of the blood, be the immediate cause of Convulsions. It is natural to suppose, that when toxæmia is present, congestion of the nervous centres is more dangerous than when the superabundant blood is healthy.

The *Treatment* of Renal Puerperal Convulsions is a subject on which a great deal might be said; but having already exceeded my limits, the leading intentions only, are, for the present, indicated in the following diagram:


TREATMENT.
1. Remove pressure from Renal Vessels, by interdicting supine posture, by unloading bowels, and (when safe) emptying uterus.
2. Relieve Congestion of Kidneys by purging, cupping in the loins, or general bleeding.
3. Venesection if apoplexy be threatened.
4. Calmatives to excited nervous system.
REDUCING TOXÆMIA
RELIEVING OR ARRESTING CONVULSIONS.

A few remarks on Lochial Puerperal Convulsions, along with some observations on Non-Toxæmic Puerperal Convulsions, are deferred to a future occasion.

Essex House, Putney, May 1849.

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an increased action of the skin may relieve the kidneys in other ways than merely by getting rid of water. In the report of the case of H. L. D. *(Scarlatinous Nephritis)*, at p. 436 of the last Number, it is noted, that at one period there was retention of urine for seventy hours, during which the patient had a strong urinous smell. The skin was in this instance acting vicariously for the kidney; and by the breath also, most probably, were exhaled the poisonous constituents of urine.

BIBLIOGRAPHICAL RECORD.

PRINCIPLES OF MEDICINE: including General Pathology and Therapeutics, and a Brief General View of Etiology, Nosology, Semeiology, Diagnosis, Prognosis, and Hygienics. By CHARLES J. B. WILLIAMS, M.D., F.R.S., Fellow of the Royal College of Physicians; Professor of the Principles and Practice of Medicine, and First Physician to the Hospital, University College, London. pp. 533. London: 1848.

DR. WILLIAMS, taking full advantage of the progress of anatomical, physiological, and chemical research, has so applied the knowledge which has been thereby obtained, as to produce the best, and the only complete, treatise which has yet been published, on the Principles of Medicine. Our knowledge of the nature and treatment of diseases can be advanced only by investigating them with the aid of the strong lights of modern science, in conjunction with accurate clinical observation. Throughout the volume, we find evidence that this sentiment influences the mind of the author; and, although occasionally by no means sparing in theory, he never allows it to take the place of fact. The work, moreover, possesses such entire freedom from verbiage, and clearness of diction, that the reader is always enabled to judge what may be considered as actually known, and what still remains matter of probability or inference. In this respect, as well as in others, the work of Dr. Williams is superior to that of Dr. Alison, which is, perhaps, the only one worthy of being mentioned along with it. It is impossible to say enough in commendation of Dr. Williams's *Principles of Medicine;* but, as a work of such sterling merit, and so long well known, it needs no lengthened recommendation at our hands. It is a book which every conscientious medical student must not only read, but carefully study; and there is no practitioner, however great his experience, who can fail to derive benefit from frequently consulting this work, which, from its comprehensive character, may truly be styled a library of medicine, from which the rubbish has been cleared away.

The first edition appeared in 1843, and contained 390 pages. The second edition contains 533 pages, and hence has undergone considerable additions. "These," says Dr. Williams, in his Preface to the second edition, "pervade almost every portion of the work, but they preponderate in the following subjects:—In Etiology, *mechanical, chemical, and dietetic causes of disease, defective cleanliness, ventilation, and drainage.* In Pathology, the tabular views of the elements of disease; *reflex action and sympathy; elementary changes in the blood; congestion; determination of blood; inflammation,* in its nature, manifold results, and modes of treatment; *degeneration of textures; cacoplastic and aplastic deposits,* and their treatment, with a notice of the action of the *cod-liver oil;* and the whole chapter on *Hygienics,* comprising *food, clothing, air and temperature, exercise, mental occupation, sleep, and excretion.*"

The work consists of seven Chapters, with an Appendix. The first Chapter treats of Etiology, or the Causes of Disease. The older writers, as well as some moderns, were accustomed to speak of the causes of disease as *proximate* and *remote;* the former being, in fact, the pathological conditions, or essential structural changes, on which the symptoms depend. Dr. Williams discards the term proximate, as the subjects to which it was applied belong to the domain of pathology, and treats of the *predisposing* and *exciting* causes of disease, which are both included in the "remote" causes of former writers. The definition, then, of causes of disease, is, that they are "those circumstances which essentially precede it, and to the operation of which its occur-

rence is due"; more or less inconstant in their operation, and often requiring co-operation, especially of a predisposing with an exciting cause, to produce disease. Sometimes their mode of operation is such, as to lead us to doubt the propriety of the terms applied to them, especially "*predisposing*"; as when persons exposed to malaria do not suffer from it until they afterwards are subjected to fatigue or privation. The fatigue or privation is then the *determining* cause.

The Predisposing Causes of Disease are defined as "commonly consisting of various circumstances, which influence the functions or structures of the body in an unfavourable manner, yet short of actual disease." They are as follows:—1. Debilitating Influences; 2. Excitement; 3. Previous Disease; 4. Present Disease; 5. Hereditary Constitution; 6. Temperament; 7. Age; 8. Sex; 9. Occupation. An abstract of the author's remarks on a few of these must suffice.

The chief Debilitating Causes of Predisposition are:—*Imperfect nourishment*, from defect either in the quantity or quality of the food, or from incapacity of the digestive powers; *Impure air; Excessive exertion of body or mind; Want of exercise, and sedentary habits generally; Long continued heat; Long continued cold; Habitual intemperance with intoxicating liquors; Depressing passions of the mind, such as fear, grief, and despondency; Excessive and repeated evacuations, either of the blood, or of some secretion;* and *Previous debilitating diseases.* These operate mainly by enfeebling the heart and impairing the tone of the arteries, the body being at the same time frequently rendered more liable to suffer, from an increased susceptibility of the nervous system.

The second class of Predisposing Causes is of a somewhat opposite character to the former, being marked by a State of Excitement or Activity. Thus, full living, without an adequate amount of exercise, may produce a redundancy of health, with more than usual capability of resisting those causes of disease which operate by depression, as cold, malaria, infection, etc. But there is a predisposition to suffer from causes of additional excitement, and any organ may be affected by such causes. Unusual vascular activity in a part, as in the kidneys from stimulating beverages, or in the brain from excessive mental exertion, is frequently a predisposing cause of disease.

Hereditary Tendency to disease is another predisposing cause, of which the instances are too well known to require enumeration. On this subject the author remarks:—"It must not be supposed that hereditary proclivity to disease commences at birth. In a few instances it is congenital; but, in the greater number, it is developed by growth or by some other circumstances in life. Gout, for example, is acknowledged to be hereditary. A parent has it in middle or advanced life; his son does not get it until about the same period, sooner or later, according to whether he lives freely or not. Here is something transmitted from father to son, yet not manifest in the son for forty or fifty years." (p. 16.) Hereditary tendency commences at birth, but the manifestation of the disease to which there is a predisposition, depends, to a certain extent, on some concurrent circumstances, as age, sex, food, habits of life.

The influence exerted by Age as a predisponent cause of disease, is well pointed out by the author, under the heads of *Early Infancy, Childhood, Puberty*, the *Termination of Growth, Adult Age*, and *Old Age*. In *Early Infancy*, the low calorific power of the body, with the scarcely adapted state of the skin, mucous membranes, and brain, to the new circumstances in which they are placed, cause a tendency to various affections of these organs. In *Childhood*, digestion and assimilation, and the excito-motory system, are more active, and hence liable to derangement. *Puberty* brings with it many morbid susceptibilities, especially in the female sex. At the *Termination of Growth*, there is a disposition in the robust to hypertrophy, hæmorrhage, and inflammation; and in the cachectic, to morbid deposits. The diseases to

which *Adult Age* predisposes, are chiefly those which arise from habits of life. In *Old Age*, the changes in the exterior of the body show a failure of those functions which were active in youth. And "the very strength and activity which some functions retain, may, from their partiality, endanger life; and their gradual and more equal failure degrades the physical and often the mental frame of man to a lower scale of existence, until he sinks into second childhood, dotage, and imbecility." (p. 21.)

Sex gives liability to various diseases, exclusive of those appertaining to the respective generative organs. In the male sex, the muscular and voluntary excito-motory systems, with the animal passions and reasoning faculty, are in a higher state of development, and hence liable to derangement. In the female, on the other hand, the predominant bodily functions are the nutritive, the sensitive, and the involuntary excito-motory; whilst the perceptive and instinctive faculties and moral emotions predominate in the mind. The menstrual function, also, both during its continuance and on its cessation, has a considerable influence in predisposing to disease.

The Exciting Causes of Disease are divided by Dr. Williams into *cognizable*, consisting of "physical and mental agents, of whose existence we can take cognizance"; and *non-cognizable*, or those whose existence can be inferred only from their morbid effects. He first treats of Cognizable Causes, under the following heads.

Mechanical Causes, besides causing surgical injuries, also produce many of the diseases which have to be treated by the physician. The most common of these causes appear to be pressure and mechanical irritation. Some mechanical injuries also directly depress the vital powers.

Chemical Causes, there is little doubt, frequently act in causing disease in the alimentary canal, the controlling vital power being overcome. There appear to be at least four modes in which chemical agents may excite disease in the body:—

"*a.* As *local irritants*, as the diluted acids, alkalies, and various salts, the chemical operation of which is resisted by increased action excited in the part.

"*b.* As *corrosives*, as in the case of strong acids, alkalies, some metallic salts, chlorine, and iodine, which, by their powerful chemical affinity, so completely overcome the vital affinities of textures, as to decompose them, and thus kill and alter the conditions of the part.

"*c.* As *septics*, promoting the spontaneous decomposition of the fluids or solids of the body, in the same way that ferments or putrescent matters operate on dead organic matter.

"*d.* As *chemical alteratives*, modifying the changes which take place in digestion, assimilation, transformation of textures, secretions, etc., as in counteracting acidity by alkalies, in variously influencing the state of the blood and urine by acids, alkalies, etc.; and in causing the production of hippuric acid in that secretion, by the administration of benzoic acid (Ure)." (pp. 26-27.)

The subject of Solid and Liquid Ingesta, as exciting causes of disease, is ably discussed by the author under three heads, viz.: *a.* Non-alimentary matters acting injuriously; *b.* Aliment defective, or ill-proportioned in quality; *c.* Aliment defective, or ill-proportioned in quantity.

a. After referring briefly to the action of condiments as causes of disease, Dr. Williams notices, at more length, the subject of intoxicating liquors, and gives an outline of the morbid effects, arising chiefly from their habitual abuse. But he by no means considers that their use can be dispensed with. When taken moderately, they act often beneficially by aiding the digestion when weak, and counteracting various exhausting and depressing influences, arising from the artificial state of society. "Total abstinence, therefore, is preferable to moderation, only because it is morally easier to practise, not because it is more salutary in its physical effects." (p. 29.) Various unwholesome adulterations of food may cause disease more or less rapidly: as poisons,

salted provisions in excess, ergotted corn, lead, etc. Under this head also, Dr. Williams includes "various medicines; and that not only when injudiciously administered, but as commonly prescribed; the remedies *necessary* to cure or relieve diseases are not uncommonly *necessary evils*; they remove one disorder by inducing another, and it is well if the evil thus induced be the smaller of the two." (p. 29.)

b. Under the head of Aliment unfit in *quality*, Dr. Williams points out the necessity for a mixed diet, consisting of a due combination of organic elements. Dr. Prout has pointed out that milk is the great type of all other kinds of nourishment, as it contains albumen, oil, sugar, and water: and all combinations of food sanctioned by custom, comprise such ingredients. With regard to the formation of fat, Dr. Williams thinks it pretty certain, from the experiments of Petroz and Boussingault, and of H. Meckel, "that fat may be formed from starch or the saccharine principles, and probably from the albuminous also." The influence exerted by excess, defect, or impaired quality, of the chief alimentary matters, viz., the albuminous, the gelatinous, the oleaginous, and the saccharine or amylaceous, is next fully but concisely detailed. Of *gelatinous* foods, the author believes that, "in a healthy constitution, gelatine may assist in the formation of albumen; but when used in excess, or to the exclusion of bread and meat, it ceases to be nutritious, and the strength and flesh will waste." (p. 33.) On *amylaceous* or *starchy* foods, he remarks that "although isomeric (*i. e.* consisting of the same elements) with saccharine matter, they are not quite similar in their physiological effects. Like it, they probably sustain the body rather by supplying a material for the process of respiration, than by nourishing the textures; they thus save them from the consuming influence of the oxygen absorbed through the lungs; and, if taken in *excess*, they may either lead to the formation of fat, which is deposited in the textures, or, passing into fermentation, they may give origin to acetic, lactic, and oxalic acids, and other matters of an injurious tendency; and this latter effect occurs more from saccharine than from amylaceous food. On the alimentary canal, too, their effects in some degree differ; amylaceous food in excess impairing the action of the intestines, and the secretion of the liver, whereas sweet things often relax the bowels and cause a redundancy of bile. These different effects of saccharine matter are probably connected with its either often containing or readily forming vegetable acids, which irritate the alimentary canal, and which may become causes of dyspepsia, diarrhœa, diabetes, rheumatism, oxaluria, and other disorders of the same class. Amylaceous and saccharine matters forming the mildest materials of food, serve to digest the stronger articles, fibrin and oil, and to render them palatable and more digestible; when, therefore, the former are *deficient*, the latter are more apt to disagree and fail to impart their nutrient properties" (pp. 34-35). This property depends probably on their containing a digestible acid, in combination with an alkali which serves to counteract the acidity, naturally arising from the process of transformation. The selection of proper articles of food is well pointed out by nature, and the appetite and taste, when not perverted and pampered, generally instruct us pretty safely.

c. Aliment in *excess*, if the digestive powers be strong, and especially in persons of sedentary habits, induces plethora, and the evils attendant on that state. Both in extreme and in less degrees of *privation* of food, symptoms of vascular and nervous irritation often accompany general weakness. Long continued privation induces a state of scurvy or cachexia; and the experiments of Chossat prove, that there is a diminution of animal heat, in animals gradually starved to death. The bad effects of insufficient diet are felt much more by those who are confined in close habitations.

Excessive Bodily Exertion of various kinds, and Strong Mental Emotion or Acute Sensation, and Excessive Evacuation or Loss, either of blood or of some secretion, are severally exciting causes of disease.

Defective Evacuation of excrementitious matter is a very fertile source of

disease. The retention of the alvine and renal discharges is pernicious—especially the latter. In several cases of the early stage of the severest form of Bright's disease, in which the urine was very scantily secreted and highly albuminous, Dr. Williams has seen "typhoid symptoms of the worst character ensue, accompanied by a breaking up and partial solution of the colouring matter of the blood, with the appearance of pus globules in it; in two instances, there was effusion of a bloody purulent fluid into the joints, a day or two before death." (p. 43.) The catamenial and lacteal secretions cause disease by their retention, at first of a plethoric character, but undergoing modification, as the quality of the blood becomes altered by the continued retention of the excrementitious matters. The sudden suppression of some habitual discharge or evacuation, produces often vascular fulness, or some disorder of secretion or of the nervous system; and the suppression, or too rapid removal, of cutaneous eruptions, seems to act much in the same way.

The next subject treated of is Defective Cleanliness, Ventilation, and Drainage. In his preliminary observations, Dr. Williams remarks, that "the necessity of self-purification is illustrated by the instinctive habits of many animals and birds, which take much pains to cleanse themselves and their young, and, in many instances, carefully remove excrements from their nests and habitations. Even plants are supposed by some botanists to exhibit a like provision for preservation against self-poisoning, in the constant spreading of their roots into new soil, uncontaminated by their own excreted matter. Yet, with strange disregard of all instinctive feelings, human beings are found constantly exposing themselves to the influence of their own accumulated filth, until disease is engendered and aggravated into pestilence, and the rate of mortality is doubled or tripled in the population." (pp. 44, 45.) The injurious effects of accumulation of filth on the surface, of defective ventilation, whether from want of pure air, or from the diffusion of positively noxious gases, and of defective drainage, are described concisely, yet with that attention which the importance of the subject demands. Dr. Williams says that he has visited many houses where defective drainage, and the consequent escape of foul air, "has seemed to be a cause of illness, or impeded convalescence, in low nervous fevers, bowel complaints, influenza, neuralgia, headaches, and other ailments." The smell is not always obvious; but the effluvia may be detected by the darkening of white paint, and the rapid spoiling of meat in the lower parts of the house.

Temperature in extremes, or in sudden transitions, is one of the most common exciting causes of disease. Our space will only permit us to extract some of the author's observations on cold. Exposure to cold—especially when partial—causes disease more frequently in another way, viz., by inducing internal disorders. Dr. Williams thinks it probable, that external cold excites internal disease by deranging the circulation, especially in the capillaries; checking the external secretion, and causing congestion of the internal organs, especially those concerned in excretion. Hence arise various diseases, as rheumatism, catarrhal affections, or inflammations. This is produced more by partial but continued cold, even when the sensation of cold excited is not great. Causes of this kind, acting long on the same part, more completely constrict the vessels, check its secretions, and more surely injure the balance of the circulation. This may often be relieved, and the further progress of disease prevented, by the use of stimulants, exertion, or a hot or vapour bath. Susceptibility to the morbid effects of cold may be diminished by means which invigorate the capillary circulation, especially the sudden artificial applications of cold, as by cold bathing or sponging, followed by friction, exercise, or other means which promote healthy reaction, by which cold is naturally resisted. "The great art in usefully applying cold with these intentions, consists in using the cold in such manner and degree, and having the body in such a state before and after the application, that the reaction

or glow, which is the sign of vigour in the capillary circulation, shall be most fully produced. If, on the other hand, the cold be applied too long, or when the body is exhausted by fatigue, exertion, or other cause, or is naturally too weak, depressing effects of cold will continue, there will be little or no reaction, and the sensations of langour and chilliness show that the cold has been injurious instead of beneficial. The addition of salt to the water of baths gives it a stimulant property which promotes reaction, and a similar influence results from the force or shock with which the water is applied. This shock excites deep and forcible respirations through an impression on the incident nerves; and these are probably the efficient cause of the reaction which follows. The reaction which follows the judicious use of cold as a therapeutic agent, may prove serviceable, not only in resisting the further influence of cold, but also in removing congestions and irregularities, in the circulation from other causes, and in exciting in the capillaries and secernents new actions, which may supersede those of disease. It is thus that the 'water cure' of Priessnitz chiefly operates; and although too powerful an agent to be entrusted to unskilled or unscientific hands, it promises to become a valuable addition to the means of combating diseases, particularly of a chronic kind." (p. 55.)

The Non-cognizable Agents, which produce disease, comprise Endemic, Epidemic, and Infectious Causes.

Endemic diseases are those which may be said to dwell among the residents in particular spots, as ague and goître. With respect to ague, it is obviously referable to *malaria* or *marsh miasma:* but the true nature of this exhalation has not been determined. Dr. Williams thinks that "the microscope, rather than chemical analysis, may be expected to discover the nature of marsh malaria." He points out the various physical causes, with respect to the sun, air, and geographical situation, which promote the influence of miasma; and notices the effects produced on the new residents in the malarious districts, and on the older inhabitants. The periodicity of attacks of ague he considers to be "probably due to the alternate accumulation of malarious influence in the blood, and the reaction of the vital powers against it." There are also other kinds of malaria, besides that which causes intermittent and remittent fevers.

Epidemic diseases, "in their affecting many persons in the same place and at the same time, resemble the endemic. But they differ in this respect, that they do not regularly return at stated seasons, nor are they confined to particular localities, although they affect some more than others; but they attack a whole district, a whole country—nay, almost a whole hemisphere—within a very short time; often coming on without obvious cause, prevailing for some time, then disappearing for an uncertain period; perhaps recurring within a few months or years, or not within the memory of man." (p. 60.) Their causes sometimes seem to depend on atmospheric influence; as is shewn by the epidemic prevalence, in certain seasons, of colds, rheumatism, diarrhœa, and dysentery. But some diseases appear at any time, without discoverable reference to season or temperature, as influenza, typhus and scarlet fevers, and other exanthemata. The influence producing these is the *epidemic, par excellence;* its nature is involved in obscurity. Dr. Williams next draws attention to a fact worthy of the most careful attention, but to which too little regard is often paid. It is this: that "various diseases, fevers, and inflammations, and almost all sorts of ailment, at some periods assume a remarkable character in common, or *type* (as it is called); for example, being attended with unusual weakness, or unusual excitement, or a tendency to hæmorrhage. This is what is called an *epidemic*, or *prevailing diathesis*, or constitution. Thus at uncertain times, fevers, wherever arising, and from whatever source, are more low, typhoid, or adynamic, than usual; at the same time, exanthematous diseases generally partake of the same character; and even patients affected with inflammations do not well bear the usual de-

pletions. Of late years, this constitution has more or less prevailed, and may be contrasted with a period of twenty years ago, when an inflammatory diathesis existed, and blood-letting was advantageously employed even in continued fever." (p. 61.) The mutability of the type of diseases, especially of the *poison-diseases* which occur epidemically, is a subject, the importance of which we would impress on the minds of our readers. It illustrates, perhaps more than any other thing, the necessity of principles in medicine; and its neglect has frequently led to serious errors in diagnosis and treatment. Scarcely any two epidemic visitations of the same disease, can be said to be precisely similar. Dr. Williams is somewhat in favour of the theory proposed by Linnæus, and advocated by Dr. Holland and Dr. Henle, that epidemic diseases are caused by animalcule tribes.

Infectious causes consist in the propagation of disease from one person to another. There are several different modes of infection:—

a. Infection through wounds, or an abraded surface; as in hydrophobia and cow-pox. *b.* Infection by contact, different parts of the body being susceptible of different diseases. *c.* Infection by exhalation from the breath, perspiration, or other secretion, conveyed through the air to the mouth and air-passages.

Some diseases may be propagated in several of these ways, as small-pox. Dr. Williams next observes, that the reality of aërial infection has been doubted by some. The difficulty, however, according to him, does not lie in the diffusion of infectious matter through the air, but in the fact of infection by any mode; that is, that disease should propagate its kind. The only two instances in nature which are analogous, are, the action of septic matters or ferments, and the vital power of generation. The former of these, however, having been shewn to depend on the production and growth of living molecules or vegetables, seems capable of being included in the second. Dr. Williams expresses himself on this subject with caution; and, without attempting to determine the matter, asks, "Does the matter of contagion consist of animal ova or vegetable seeds? Are infectious diseases the results of the invasions and operations of living parasites?" (p. 64.) Such a view, he thinks, may be supported by the consideration of those influences which promote or retard infection. Infectious matter is destroyed by a temperature above 120° Fahr., and by strong chemical agents; also by intense cold. Warmth, closeness, and filth, on the other hand, increase its virulence; and especially the crowding of patients, as in fever hospitals.

Two or more of the non-cognizable causes of disease frequently seem to act in conjunction; thus small-pox, scarlatina, measles, etc., are occasionally increased and modified by epidemic influences, or by endemic impurities. Their primary action is mostly depressing; and the subsequent reaction depends on the relative strength of the poison, and of the vital resisting power, as well as on the presence of certain cognizable influences, as temperature.

In the Second Chapter, Dr. Williams treats of the PRIMARY ELEMENTS OF DISEASE. The neglect of the precept, that an accurate knowledge of the functions of any organ, whether in health or disease, cannot be obtained until we have investigated the functions of its component parts, has greatly retarded the progress of pathological science. The analogy between the study of pathology and of other sciences is obvious. "The chemist, in the examination of his subjects, finds that there are some principles or elements which cannot be analyzed or divided further; these he calls ultimate or primary elements: others, again, are simple compounds, which may be analyzed; but they occur so constantly, and act so singly in compounding and giving properties to complex matter, that they are called proximate principles or secondary elements. A parallel case might be shewn of physical science. So it should be with physiology and pathology. There are the healthy and diseased *primary* or *ultimate elements of structure*—muscular fibre, nervous matter, vascular fibre, and the elementary tissues of membranes, glands, skin,

and other parts; and there are *primary elements*, *healthy* and *diseased*, of functions of these same structures—irritability, tonicity, nervous properties, to which may be added, because we cannot at present analyze it, the power of secretion and nutrition; and lastly, the constituents of the blood. And there are the *secondary* or *proximate elements* of disease, composed of the preceding primary elements, but still simple in comparison with the complex conditions of disease which they combine to produce." (pp. 67-8.) The various elements are considered under the heads of *degree*, including *excess* and *defect*; and of *kind*, relating to changes which may be expressed by the name *perversion*.

Muscular Irritability—the Hallerian theory of the intrinsic nature of which is adopted by Dr. Williams, supported as it is by various experiments, especially those of Dr. John Reid—may manifest *excess* in three different ways: 1. By an excessive strength and degree, as in the violent action of the heart during exertion, and in the extraordinary power of delirious patients. 2. By an inordinate quickness or promptitude, co-existing often with want of power in the contractions; as in the irritable heart, and in hientery; but more remarkably in *convulsions* or *clonic spasms*, as in chorea, epilepsy, and convulsive hysteria. 3. By the unusual duration of the contractions, as in *tonic spasm* or *cramp*; and, in a more general but moderate form, constituting catalepsy, and in extreme cases, tetanus. The pathological causes may be either an undue or irregular supply of blood to the muscle, or irregular nervous influence or excitement; and on the nature of the causes the treatment must depend.

Muscular Contractility may be *defective* in two ways: 1. In force; as in the weakness of voluntary muscles or heart under various depressing circumstances; such as excessive exertion, or disease, or poisons, acting more or less gradually. 2. In readiness to contract; as after the irritability has been lowered by opium, or in the slow pulse caused by digitalis, lowering remedies or diet, or some cerebral affections. The cases of defective irritability clearly point out, that muscular power is much under the influence of the nervous system, though not originating from it. In paralysis, convulsive movements may be excited by mechanical irritation or electricity. The *remedial measures* vary with the cause of the defective irritability; and consist generally of rest, friction, internal stimulants, electricity, strychnia, and cantharides; and generous diet, with tonics and a healthy air, to render the blood richer in fibrin, by which the muscles are nourished.

Tonicity is a property possessed by muscular structures, and also by some others. It is a tendency to slow, moderate contraction, not essentially terminating in relaxation; but it keeps the parts in which it resides in a certain degree of tension. It performs a most important part, especially in the arteries, which it adapts to different degrees of fulness, yet maintains in their walls a degree of tension favourable to equality in the motion of the blood. It exists also in tissues which are not strictly muscular, as the veins and cutis. It is difficult to ascertain the exact limits between tonicity and irritability; but cold increases the former, and impairs the latter, though they are in general influenced by the same agents. Tonicity appears to us most nearly allied to that form of contractility, which is characterized by power rather than by readiness.

Excess of Tonicity is manifested by firmness of the muscles, hardness of the pulse, warmth of surface; but, at the same time, impeded action of the secreting organs. The vascular system is in a state of high pressure; and while there is an increased power of resistance to endemic, epidemic, or infectious influences, there is an increased liability to congestive and inflammatory disorders. The pathological causes may be excess of nourishment, a dry bracing air, tonic remedies, or the excitement of fever, etc. The *remedial measures* should be directed to the permanent relaxation of the tonic fibre; and hence warm bathing, exercise, sudorifics, aperients, and

diuretics, with moderate diet, are preferable to, or must accompany, blood-letting, which only produces temporary relief.

Defective Tonicity is often associated with excessive readiness to contract, and is often observed, after convalescence from fevers and other diseases, after the subsidence of vascular excitement. A person in this state is peculiarly liable to various diseases, being unable to resist malaria, infection, or other depressing influences. The system is, moreover, often on the verge of disease, especially congestion and its consequences. The *remedial measures* are tonics, of which Dr. Williams thinks cold, suddenly applied, one of the best. Pure bracing air, generous living, and various medicines, have also well marked tonic effects.

The diseases of SENSIBILITY may be General or Local, and may consist in *excess*, defect, or perversion. *Excessive* General Sensibility may arise from excitement of the nervous centres in the early stage of inflammation, or of determination of blood to the head: or it may be exemplified in the case of *nervous* persons. In these, there is also generally excess of irritability, and want of tone. The pathological causes may be an undue supply of blood to the posterior parts of the spinal marrow, the corpora restiformia, and the parts of the cerebral mass concerned in sensation. This may arise either from original development, or from inflammatory affections of the encephalon, irregularities in the menstrual discharge, or re-action after loss of blood. The habits of the upper classes are well calculated to foster an over-sensitive state. According to these causes, the treatment will vary, being narcotic, antiphlogistic, or tonic. On etherisation, Dr. Williams remarks, that "the operation of ether vapour is obviously narcotic, like that of opium and alcohol; and is more speedy and transient, because it passes freely and directly through the lungs into the arterial blood and affects the brain, and is as promptly dispersed by its diffusion throughout the body. It has been maintained by many, that it operates by its interference with the respiration, inducing a degree of asphyxia; but this is so far from being the case, that its best effects are produced when the respiration is steadily maintained: and it has always appeared to me that the end to be aimed at in the administration of ether-vapour, is to narcotize, so far as possible, without too much embarrassing the breathing" (pp. 81-82). He recommends the mixture of ether-vapour with oxygen gas, believing that the atmospheric air scarcely supplies a sufficient quantity of oxygen.

Defective General Sensibility in its extreme degree, is exemplified in coma from obstruction to the cerebral circulation, or from narcotic influences; or from retention of excrementitious matter, as urine. Sometimes it arises congenitally, or from disease, or age; and in such cases, it is often accompanied by defect of irritability, with much tone of fibre, and the corresponding immunities and liabilities. The remedies will be depletion and analogous measures in cases arising from fulness or obstruction; exciting measures in mere torpor; purgatives, diuretics, etc., in anæsthesia from poisons; tonics in those cases which sometimes arise from anæmia. It is doubtful whether there is any remedy capable of directly increasing this function.

Perverted General Sensibility is exemplified in the affections well known under the name of hysterical; and the remedial measures must be directed to the improvement of the supply or quality of the blood, which acts injuriously on the nervous system.

The modifications of Local Sensibility, and of General and Partial VOLUNTARY POWER, are next treated of by Dr. Williams; but we must pass on to the next subject, that of the INVOLUNTARY EXCITO-MOTOR POWERS, described by Dr. Marshall Hall. These, when in *excess*, may be accompanied by sensations, as in the spasmodic affections of hydrophobia, tetanus, and some hysterical affections; or they may be independent of sensation and volition, as in the convulsive twitching of paralysed limbs. Convulsions also may be referred to this head, as they arise from irritation of the true spinal system, either centric or ex-

centric. Partial spasms, caused by reflected irritation, are exemplified in cramp of the legs in diarrhœa and cholera, in sneezing, coughing, etc. But these only imply increased excito-motory influence, when they are out of proportion to the sensations with which they are connected. More remarkable instances are spasmodic affections of the heart and other involuntary muscular organs, frequently arising from intestinal irritation. As to the cause of inordinate reflex action, it may be, in the more partial cases, direct excitement of a small portion of the spinal and prolonged medulla, or of the incident, or excito-motory nerve, of the part affected. When the reflex action is more general or extensive, it must be referred to an erethism of the medulla, referable sometimes to an increased flow of blood, as in the early stage of inflammation of the spinal chord or its sheath, and very probably in epilepsy; sometimes to poisons, as strychnia; to mechanical irritation; to tetanus—which, apart from vascular influence, exhibits this element of nervous irritation in its most fearful form; to accumulation by rest, as in poisoning by opium, and in sleep, at which time spasmodic attacks are most frequent.

Defect of the Reflex Function is exemplified in the paralysis which affects the sphincters, and other muscles whose normal action depends on this function. When it is considerably impaired, the result will be fatal, from the interference with the actions essential to life. These actions are the last to fail; so, in recovery from partially suspended animation, they are the first to recover; hence, vomiting, coughing, and sneezing, are among the early signs of re-action. A lower degree of failure is observed in extreme debility, whether from fatigue, or from directly depressing influences. "A person in this state is *too weak to sleep;* for the medulla, partaking of the general exhaustion, cannot maintain the respiration without assistance from voluntary efforts. Hence the feeling of oppression, and the frequent sighing, which banish all repose; or if sleep do occur, it is disturbed by startings and fearful dreams, occasioned by the painful sensations of imperfect breathing." (p. 96.)

The remedies for *exalted* Excito-motory Power will consist of those for hyperæmia when present, or of sedatives or tonics. Some sedatives operate directly, as hydrocyanic acid, Indian hemp, and conium; others appear to stimulate the heart and vessels, thus equalizing the circulation, preventing determination and congestion, and thus operating as sedatives to the medullary system, as æther, ammonia, creosote, alcohol; etc., which are useful in spasmodic affections in weak subjects. Tonics seem to act indirectly, and hence gradually; and it is uncertain whether their beneficial effect is entirely exerted on the vascular system, or whether they have also a more direct influence on the nervous system. The chief remedies for *defective* reflex influence are stimulants, narcotics, and various strengthening remedies; and their beneficial effect is most marked, when they procure sleep. The remarks on the Pathology of the Nervous System are concluded with some observations on Reflected or Sympathetic Sensations.

Diseases of Secretion are next treated of. This appears to be a vital property of the ultimate cells or molecules of secreting structures. The secreted matters seem sometimes to be formed by the secreting organs, and sometimes to be merely eliminated by them, after having been formed in the blood. In either case, the elective power of the organ is a peculiar attribute of life; and we can scarcely say more, than that secretion takes place through chemical affinities, controlled by vital agencies. This function, as well as others, is liable to be influenced by the supply of blood to the respective organs. Affections of the nervous system, and of the mind, may also modify it, but whether by altering the flow of blood, or by more directly modifying the vital property of the secreting organ, is uncertain. Secretion may be an element of disease, either by being *excessive*, *defective*, or *perverted*.

Excessive Secretion of any kind, as bile, urine, mucus, etc., besides its general debilitating influence, may produce peculiar effects, in connexion with its office and composition. These may be *forcordi*, on the parts to

which the secretion goes; and *backwards*, on the organ, and on the blood from which it is eliminated. The forward effects of *excessive* Secretion in or on a mucous membrane, are generally dependent on its stimulating properties, and may amount to a flux or profluvium; in serous membranes or cellular texture, various dropsies may be produced. The backward effect on the organ is frequently a lowering of its vital properties, so as to induce torpidity; and hence the secretion itself may be in time impaired in quality. Of the effects on the blood, Dr. Williams remarks: "Excessive secretions, if abounding in animal matter, may not only reduce the mass of the blood, but also affect its composition. Thus bile and urine, which differ much in composition from the blood, if separated in unusual quantities, must leave the blood modified. Urine contains a great preponderance of azote; and its excessive formation from the principles of the blood, would leave a preponderance of hydrogen and carbon in this fluid. The bile, again, abounds in hydrocarbon, the copious removal of which would occasion a superfluity of azote. It may be objected to this statement, that, according to the opinion of some chemists, the urine and the bile are not formed from the constant elements of the blood, but from materials derived from the food, and from the decay or transformation of the tissues. To this it may be replied, that this opinion is at present no more than hypothetical; and should it prove to be true, it would not affect the undoubted fact, that the secretions of the liver and the kidneys are intended to balance one another, and the removal of carbon from the lungs; and that, whether the materials from which these eliminating processes are supplied, be the principles of the blood itself, or the decayed constituents of tissues, the co-operation of all these processes will be generally required, to maintain an uniformity in the composition of the circulating fluid: so, too, if one of these processes be more active than the others, the blood must suffer by the excess of those matters which the less active processes allow to accumulate in it. A clinical illustration of this position may be found in cases of bilious diarrhœa or cholera. This flux of bile is either accompanied by a highly loaded state of the urine, or by fever; in the latter case, the fever does not subside until the urine becomes very copious, or deposits an abundant sediment. The most probable interpretation of this fact is, that the excessive secretion of bile disorders the composition of the blood; so long as the kidneys rectify this disorder, by separating in greater abundance the solid constituents of the urine, no fever results; but if the kidneys fail in this task, fever ensues, and continues till they accomplish it; then a free secretion and copious deposit is symptomatic of the decline of the fever." (pp. 102-3.) The remedial measures will consist of depletion, derivation, and evacuation, in cases of congestion or determination of blood; of astringents, in cases where it seems to depend on nervous and other sources of irritation; and of remedies calculated to restore the balance of the secretions. In the latter case, combinations of medicines are often more useful than those which fulfil only one indication.

Defective Secretion may cause a state of plethora, general or local. Various forward effects arise from the defective secretion of bile, mucus, cerumen, saliva, or synovia; but the most remarkable are found in the case of the excretions. "Thus, the sudden suppression of urine or bile causes typhoid symptoms, extreme depression, and coma, which speedily end in death; and in such cases, urea, or the colouring matter of the bile, has been found in various organs. Where the suppression is incomplete, the poisoning process is more tardy; various functional and visceral derangements are produced, such as delirium or lethargy, dyspnœa, palpitation, vomiting, diarrhœa, dropsical effusions, structural degenerations, etc., which always cause injurious effects, if the defective excretion be not restored. But the amount of these effects will depend on the extent, and especially on the suddenness of the diminution of the excretion; and it is very remarkable, when it is gradual, how little disturbance it may for some time induce. In these gradual cases, still more remarkably

than in those of sudden suppression, some of the excrementitious matters may be detected in the blood, and in other solids and fluids of the body. Thus in some structural diseases of the liver, the colour of the bile becomes manifest, first in a yellow, and, by accumulating, in a deep greenish colour in all the textures, constituting the yellow and the black jaundice. In granular degeneration of the kidneys, in which scarcely any urea is excreted by these glands, this principle is found in the blood and in various fluids of the body." (p. 106.) In the latter kind of cases, urea has been several times detected in the blood. The excretions are often defective in fever; and this appears to be the cause of many of the constitutional symptoms which arise in their course. Fluidity and other changes in the blood seem due to this cause. The remedies for defective secretion depend often on the presence of anæmia or hyperæmia: but sometimes the organs require specific stimuli. These, however, are liable to exhaust the vital properties of the organ, hence it is frequently advantageous to alternate them, or combine them with tonics. The forward effects may be sometimes remedied by artificial substitutes.

Perverted Secretion often accompanies excess and defect, especially in the urinary and intestinal secretions. These altered secretions often become causes of disorder. The remedies are chiefly those which increase secretion; and, frequently, in cases of long continued perversion, those medicines which have obtained the name of alteratives, are indicated.

Diseases of the CONSTITUENTS OF THE BLOOD, in *excess*, *defect*, and *alteration*, are treated of in the following order: 1. Red Particles; 2. Fibrin and Colourless globules; 3. Albumen and other dissolved animal matters; 4. Oil; 5. Salts; 6. Water.

The subjects of *excess* and *defect* of the Red Particles, and their treatment, must be here passed over, until we come to treat of the conditions with which they are severally associated—plethora, and anæmia. *Alterations* in the Red Corpuscles are evinced by changes in the colour and consistence of the blood, and in their form, as seen under the microscope. The blood has been found altered in colour and consistence, in the worst forms of scurvy, and in some malignant fevers, and in the worst forms of cachæmia from malarious influence. The staining of the blood vessels in some congestive typhoid fevers, as well as the occurrence of petechiæ and ecchymoses, and the discoloration of the skin in albuminuria, yellow fever, and some other diseases, are apparently partly due to a change in the colouring matter of the blood. The changes in the form, size, and other properties of the red particles, seem connected with the medium in which they are placed. Dr. Williams lays some stress on an excess of water in the blood, as influencing the red particles; and cites the opinion of Dr. O. Rees, that the diminution of the blood discs in albuminuria is probably due to this cause, the water being left in excess by the excretion of albumen. It seems probable to us, however, that alteration of the red particles depends, in a great measure at least, on the presence of some poison in the blood; and we are confirmed in this opinion by their being found changed in form, or destroyed, in chlorosis and in disturbed functions of the liver, with or without jaundice. After some remarks on the cause of the changes of the colour of the blood from dark to florid, on the addition of saline matter or oxygen, which Dr. Williams believes to act probably by giving increased density and distinctness to the red and colourless particles, so that they reflect light more abundantly; and on the disposition of the red particles to adhere, under certain circumstances, the author refers to a diseased state of the spleen, and disordered uterine function, as the most remarkable influences which retard their formation. The former of these causes he supposes to act by *spoiling* the blood, by its retention in a stagnant state in the diseased organ. Of the latter he remarks that "the uterine system remains congested after the repression of the discharge; and the blood in the system suffers not only from the interruption of a process of excretion,

(MM. Gay Lussac and Andral have proved it to be such), but also from a reservoir of impure blood which tends gradually to derange and contaminate the whole mass." (p. 119.)

Excess of Fibrin, constituting hyperplasma, or hyperinosis, occurs in all true inflammatory diseases, in the latter months of pregnancy, in tuberculous diseases, and in various states of atrophy and cachexia, and apparently, though not absolutely, in chlorosis. *Deficiency* of Fibrin (hypoplasma, or hypinosis) is of frequent occurrence in many diseases, and conditions bordering on disease. It may arise from impeded arterialization, or from mixture of venous with arterial blood, as in asphyxia and cyanosis. Excessive bodily fatigue more or less expends the fibrin; but it is not generally diminished in animals killed by lightning. Many poisons, and other causes of sudden death, induce often a fluid state of the blood after death, some probably from impeded respiration, as hydrocyanic acid, apoplexy, division of the pneumogastrics; others from a more direct operation on the blood itself, as arsenic, sulphuretted hydrogen, etc.; also adynamic fevers, which arise from a peculiar poison. In the latter cases, the deficiency of fibrin may be a chief cause of the hæmorrhages, petechiæ, and vibices, which sometimes occur. Dr. Williams does not think it probable, that the hypoplastic state of the blood in scurvy is due to salted food. Such a condition causes a tendency to hæmorrhages, and a retardation of the reparative process after injuries; and there can be little doubt, that various irregularities in the circulation and distribution of the blood are also due to a deficiency of Fibrin. Alterations in the *quality* of the Fibrin introduce to our notice the important appearances presented by the buffy coat, and by the contraction of the clot of blood. The causes influencing severally coagulation, contraction, and separation of fibrin from the red particles, are noticed by the author. These, as is well known, may be influenced by the rapidity with which the blood is drawn, and the shape of the vessel into which it is received. As to the contraction and cupping of the clot, Dr. Williams remarks that "being due to the fibrin, it might be expected to be in proportion to its quantity; and this is the case in inflammatory diseases. But there is also great contraction, and often cupping, in chlorosis and some analogous states, in which the fibrin is not absolutely increased; the red particles being much diminished, the contractile property of the fibrin is not impeded. . . On the other hand, there is little or no contraction, where the red particles are in proportionate abundance, as in sanguineous plethora, or where the aggregation of the fibrin is impaired by the addition of saline matter. In a boy under my care with purpura, Dr. Garrod found the fibrin in the blood quite as abundant as usual, amounting to 3 in 1000 parts; but it was remarkably defective in the usual contractile property; and the salts of the blood were in excess." (p. 126.) The separation of the fibrin from the red particles may be favoured by four circumstances:—1, the tardy coagulation of the fibrin, giving more room for the separation; 2, increased specific gravity of the red particles; 3, diminished specific gravity of the fibrin; 4, diminished spissitude of the liquor sanguinis. But these alone are not sufficient to account for all the phenomena observed; and we may adopt the idea of Dr. H. Nasse and Mr. Wharton Jones, supported by the observations of Mr. Gulliver, that the separation of the red particles of inflammatory blood is due to their increased tendency to form piles or rouleaux. The increased lightness of the buffy coat, apparently due to an increase of fat globules, contained chiefly in the pale corpuscles scattered through it, must also be taken into account.

The increase of fibrin in inflammatory diseases might at first be supposed due to the acceleration of the circulation and respiration; but these are not always in proportion. It is more probable that the increase of fibrin during inflammation has its origin in the vessels of the inflamed part. The formation of fibrin, as well as its power of coagulation in the blood, is favoured by two circumstances, the presence of the pale corpuscles or of their constituent

granules, and the formation of the deutoxide of protein by some oxygenating process acting on the albumen. This oxygenating process commences in the mesenteric glands, and a further supply is obtained in the lungs; but the perfection of the organizability of fibrin appears dependent on vital changes. The fibrin may vary in its capacity for the nutritive process, irrespective of its quantity; being *explastic*, *encoplastic*, or *aplastic*. In scrofulous and tuberculous subjects, the fibrin, though abundant, commonly exhibits a predominance of granular matter and fat globules, as if it were imperfectly elaborated. The red particles are, in such cases, deficient in number, and this suggests a probable cause of the imperfection of the plasma.

In the treatment of hyperinosis, blood-letting and low diet are the chief means of reducing the fibrin, which; however, they affect less than the red particles. Mercury, alkaline salts, iodine, and antimony, are useful, as well as purgatives, and means to increase much the more solid secretions. According to the views of Dumas and Liebig, the saccharine, amylaceous, or gelatinous forms of food, must reduce the fibrin and albumen of the blood; and this is in consonance with experience, these being the best in inflammatory diseases. Bodily exercise may be employed advantageously, in sthenic plethora and scrofulous hyperinosis. The retardation of the formation of fibrin, by lowering the activity of the respiration, by narcotics or other remedies, is worthy of further research. The fibrin has been found reduced in quantity in a phthisical patient, by Simon, after taking cod-liver oil.

Hypinosis is to be remedied by assisting the assimilative functions, by diet abounding in protein compounds, tonics, and pure air; and by avoiding the expenditure of fibrin by over-exercise and other exhausting processes. When it arises from a septic poison, no means can be efficacious, so long as the poison remains in the system.

Very little is known of the power of remedies to correct changes in the quality of the fibrin. The properties manifested by the buffy coat in inflammation, though at first reduced by blood-letting, often soon return. The plasticity of fibrin may be lowered in cases of local inflammation, by blood-letting and other antiphlogistic remedies, even if they do not remove it at once. When there is any tendency of this kind, it should be an indication to improve the general condition of the blood by a tonic and nutritive plan, at the same time that local antiphlogistic measures may be necessary. A similar tonic treatment is still more indicated in scrofulous, chlorotic, and other cachectic states, in which there is an excess of ill-elaborated fibrin. It may also be desirable to use remedies which keep the fibrin dissolved, so as to prevent its deposit in the aplastic forms. Alkalies and iodide of potassium are useful; but more is to be expected from dietetic and regiminal means, which secure the most nutritive food, and promote the organic functions by pure air, exercise, frictions, and suitable medicines.

We must pass over the sections on Albumen, Oil, Saline Matter, and Water, and notice shortly the Changes in the Blood by Respiration. It is doubtful whether these ever occur in *excess*; for, by an admirable adaptation, the activity of respiration is in proportion to the rapidity of the circulation, and to the need of change in the blood.

Defect of the Changes of the Blood in Respiration varies in its effects, according to its sudden or gradual supervention; an acute attack of the organs of respiration being capable of proving fatal, by an impediment to the breathing much smaller than that which occurs in many chronic diseases, as emphysema, but is more gradual. "The cause of this difference is not merely the general fact that sudden changes produce more effect than slow changes, but it lies chiefly in the fact that the importance of the respiratory functions varies under different circumstances. When the several parts of the body, especially the muscular, are in a state of full activity, more breath is needed to remove from the blood the noxious effete matter, which always results from

functional exercise. Hence in such a condition (which is that of healthy action) the respiratory process cannot be abridged without serious disorder. This disorder is first obvious in the increasing feelings of oppression and suffocation which the want of breath causes, and which excite forced exertions to breathe. If these exertions still fail to duly aërate the blood, it is partly arrested in the lungs, right compartments of the heart, and veins, and partly passes, in an imperfectly arterial state, to the left side of the heart and arteries. The phenomena of asphyxia are thus compounded of—1. Accumulation of blood in the venous system; 2. Diminution of blood in the arterial system; and, 3. Deficiency of oxygen and excess of carbonic acid in the blood. These several conditions cause injury to the vital functions, both by the want of a due supply of blood, and by the bad quality of that blood, which is injurious,—negatively for want of oxygen, the proper exciting agent, and positively from its excess of carbonic acid and other excrementitious matters which are sedative. The symptoms induced are also of two classes—1. Those implying failure of function, such as muscular debility, feeble action of the heart, pallor and coldness of the surface and extremities, and abolition of the senses and mental faculties; and, 2. Those arising from congestion and the noxious influence of the black blood, such as palpitation, flashes in the eyes, noises in the ears, delirium, muscular spasms, etc. Each of these sets of symptoms may predominate in different cases, and this causes a variety in the phenomena of asphyxia, which has not been sufficiently noticed by writers on this subject." (pp. 143-4.) An amount of defect in the respiratory changes may be gradually induced, which would be rapidly fatal under common circumstances. This is especially observed in cyanosis, and in such cases as emphysema. In these cases, also, the muscles are generally weak, and frequently subject to deposition of fat, which seems in accordance with Liebig's view that respiration directly consumes the oily parts of the blood.

In the treatment of defective respiration, besides the obvious indications of restoring it, means are to be used for lowering the activity, and hence equalizing the functions. Such remedies are perfect rest, warmth to the surface and extremities, pure and cool air; also various sedatives, which, by reducing the circulation and other functions, diminish the want of breath. Ether, stramonium, lobelia, etc., probably act in dyspnœa by relieving spasm. In extreme cases, the enfeebled circulation may require stimulants; and the experiments of Chossat, Erichsen, and others, and the experience of the officers of the Royal Humane Society, have proved that none is more efficacious than heat to the whole body, especially the warm bath; warm frictions and stimulating applications are also very useful. It is uncertain whether we possess any means of arterializing the blood by any other process than that of respiration; but the internal administration or injection into the veins of saline and other matters holding much oxygen in loose combination, as the chlorates, nitrates, and some peroxides, is a subject deserving of further inquiry. The removal of carbonic acid,—an office which these would leave undone,—might possibly be accomplished by the administration of free alkalies. Dr. Williams thinks he has seen benefit in asphyxia by carbonic acid gas, from the use of liquor potassæ with chlorate of potash. Warm baths and frictions with these matters might also be serviceable. Another indication in imperfection of the respiratory process, is to remove the congestions which take place in internal organs; and the best remedies for such cases are mercurials and others which act on the secretions, which probably act by making the liver assist in decarbonizing the blood. When the respiration has become gradually defective from disease, food containing much hydro-carbon, as fat or spirits, is contraindicated; lean meat and other fibrinous articles, with farinacea and acid fruits, should form the chief sustenance.

Changes in the Blood by Excretion form the subject of the next section. The effects of defective excretion of urine and bile having been already referred to, under the head of Defective Secretion, it will be unnecessary to re-

for further to the remarks of Dr. Williams on these subjects, than to state that the principles of both these secretions have been found in the blood, in disease. The *perspiratory* secretion contains lactic acid and lactates, arising chiefly from the decay of the muscular texture. When perspiration is checked by external cold, these may be retained in the blood, producing rheumatism, urinary disorders, or various cutaneous diseases. Such cases are frequently remarkable for the acidity of the cutaneous and renal excretions. In low forms of rheumatism, such as the neuralgic, the *materies morbi* is probably oxalic acid. The remedies for diseases arising from defective excretion should be not merely antiphlogistic (when such are indicated), but eliminative. For this purpose, sudorifics may suffice in slight cases of rheumatism; but, in others, the kidneys and liver should be excited by various combinations of colchicum and alkalies with mercury, opium, and iodide of potassium. In the asthenic form, and especially in neuralgic rheumatism, tonic remedies are indicated.

Changes in the Blood from the Transformation of Chyle and of the Textures have not been sufficiently examined, to afford any certain data; but we may connect with them the pathology of *gout* and other *lithic acid diseases*, *diabetes*, both *saccharine* and *ureal*, and *obesity*.

Gout, and the commonest kinds of urinary gravel, are now generally considered to depend on an excess of lithic acid; and this seems confirmed by an observation of Dr. Garrod, who detected this acid in the blood of a patient suffering from chronic gout; it being at the same time absent from the urine. This acid is generally produced in those, who take a large proportion of animal food, and whose digestive and assimilative functions are impaired; it probably results also from the decay of the textures, especially in febrile or inflammatory irritation. The effects of an excess of lithic acid vary. The kidneys sometimes suffer from irritation, hence nephralgia and nephritis may occur; or the water and alkalies secreted with it may be insufficient to hold it in solution, hence crystallized sand or gravel, or calculus. But the kidneys may fail in their power of elimination; and the lithic acid and its compounds, being retained in the blood, produce gout.

Saccharine Diabetes is correctly regarded by Dr. Williams, in common with several other pathologists, as arising from disorder of digestion and assimilation, the state of the urine being merely a consequence. Sugar has been found in the blood of diabetic patients; and it has also been proved to be formed in unusual quantities, during the process of digestion. "The facility with which, in the laboratory, starch and gum can be converted into sugar, throws much light on the origin of sugar in diabetes; and the actual presence of a very large amount of acid in the stomach of diabetic patients, confirms this mode of explanation. But it is probably not only formed from isomeric principles in the food, such as starch and gum, but in confirmed cases it is also derived from a decay of the textures, especially the gelatinous, by a modification of the process in which urea is naturally evolved, as it has been found practicable to convert gelatine partially into glucocoll, which has saccharine properties, and probably consists of sugar and urea. As there is saccharine matter naturally in chyle, (and even in blood, for a short time after the chyle is added to it,) it might be supposed that there is, in incipient diabetes, an exaggeration of the process by which saccharine matter is formed; and this is countenanced by the fact ascertained by Bouchardat, that the sugar in the blood of diabetic patients is at its maximum during the process of chylification, and that it almost disappears after a long fast. It is therefore probable, that the atrophy and cachexia accompanying the disease, result from the draining away of the nourishment of the body *with* the excess of sugar, rather than the conversion of all this nourishment *into* sugar. It is now well ascertained, that the ordinary animal constituents of the urine are not only present, but are often increased considerably beyond their natural amount." (pp. 156-7.)

The indications of *treatment* in gout and diabetes are parallel, though the means for their fulfilment are most opposite, especially as regards the diet.

In both cases, there seems to be an unusual development of acidity in the system; and in both, alkalies have been found useful,—soda and potass in gout, to assist in the elimination of lithic acid, and ammonia or magnesia, or the alkaline phosphate of soda, in diabetes. In both gout and diabetes, benefit seems often derived from tonics.

The formation and excretion of urea is sometimes increased, without being explicable by any obvious excitement of the respiratory functions, as in the *diabetes ureosus* of Dr. Prout. It also occurs sometimes in typhoid fevers, with great loss of flesh and strength. Urea has been found increased in the urine of some patients with acute rheumatism and delirium tremens, at the decline of the fever; but this was perhaps from a removal of that which had been accumulating. The treatment of excessive formation of urea consist in avoidance of great bodily or mental exertion, generous diet, and tonics; opium and other narcotics are also found useful in reducing the urine, in diabetes ureosus.

Independently of an excessive deposition of Fat, constituting obesity, its excessive production sometimes occurs as an error in assimilation. It may then interfere with the production of the animal principles requisite for the nourishment of the textures, and, by being substituted for them in the textures, produce their degeneration. In the last number of this JOURNAL, we gave an abstract of the observations of Mr. Hallett on the adipification of muscle, and referred to the lectures of Mr. Paget on the subject of fatty degeneration. Mr. Gulliver (*Medical Gazette*, June 1843,) has shewn the atheromatous patches in arteries to be of this nature, and has also found a predominance of fatty matter in the lungs, the kidneys, and testicles, under various chronic diseases. Dr. Williams, and Dr. R. Quain, as well as others, have also observed an abundance of fat in the kidneys, liver, and other structures, in persons in whom general cachexia had been induced by intemperate habits.

CHANGED PROPERTIES OF THE BLOOD FROM THE PRESENCE OF FOREIGN MATTERS are evidenced in cases of morbid poisons. Various authors notice the production of typhoid symptoms, from the introduction into the blood of matter from diseased subjects; and not only from actual introduction, but even from contact, or from smell. There is good reason to suppose that purulent matter, and the germs of carcinoma and other malignant diseases, are spread through the system by means of the blood. The tendency to symmetrical distribution in certain local affections has been adduced by Dr. W. Budd as a proof of this.

The *treatment* of this element comprehends two indications; 1, To counteract the injurious operation of the poisonous matters; 2, To expel them from the system. To fulfil the first of these, we give stimulants in adynamic fevers and cases of sedative poisoning; anti-periodic tonics in ague; opium in irritation. The other indication is more generally pursued; and the propriety of assisting the excretory functions, especially those of the kidneys and alimentary canal, is pointed out by the frequent salutary occurrence of diarrhœa, diuresis, or perspiration in fevers, and by the energy with which poisons in general operate on those, whose excreting functions are much impaired.

To be continued.

THE UNDERCLIFF OF THE ISLE OF WIGHT: ITS CLIMATE, HISTORY, AND NATURAL PRODUCTIONS. By GEORGE A. MARTIN, M.D. pp. 366. London: 1849.

A very sensible, well-written account of everything that concerns that favoured portion of the island. It has the merit of affording to the invalid much valuable information respecting the climate, temperature, and accommodation there to be found. In addition, there is an elaborate description of the zoology, botany, geology, and hydrology of the island, which will be invaluable to those who would willingly divert their thoughts from their own cares and sufferings, by studying the great book of Nature. The hygienic remarks are full of sound good sense, and the work cannot fail to be popular.

LECTURES ON THE PARTS CONCERNED IN THE OPERATIONS ON THE EYE, AND ON THE STRUCTURE OF THE RETINA, delivered at the Royal Ophthalmic Hospital, Moorfields, June 1847; to which are added, a paper on the Vitreous Humor, and also a few cases of Ophthalmic disease. By WILLIAM BOWMAN, F.R.S. pp. 143. London: 1849.

It has seldom been our good fortune to meet with a work possessing more sterling merit, than the unpretending volume now before us. That modesty accompanies merit, is generally acknowledged; and in nothing is this more conspicuous than in literary productions. Some of these are ushered into existence with all the pomp and circumstance of newspaper puffs, fine paper, grand illustrations, and rejoice in fair clothing of purple and gold: and yet how often do they disappoint our expectations!—how often does the gay mantle conceal the nakedness of vanity, ignorance, declamation, or error! Other works modestly appear, with no other recommendation than is afforded by their contents. It is these latter whose acquaintance we are glad to make, and of them is the volume on which we now proceed to comment.

The author, having taken a general view of the Eyeball, proceeds to describe the Structure and Relations of the various parts composing it; and, as there are many points on which he has thrown light, we propose to consider them *seriatim*.

The first which strikes us, is the mode in which the tendons of the recti muscles are implanted into the sclerotica. It is commonly taught, that these, having joined side by side, spread out as a kind of external investment to the front of the sclerotica. The investigations of MR. BOWMAN, however, shew that these tendons are truly implanted into the sclerotica, penetrating and proceeding forwards in the middle of its substance, and leaving its outer layer exposed under the conjunctiva; thus it is the true sclerotica, and not the expanded tendons, which is visible as the white of the eye. From the above arrangement of the tendons, results a practical point. The recti groove the sclerotica before entering it, and render it very thin; and it is at those spots that abscesses of the eyeball are most prone to burst.

The cornea is described by Mr. Bowman, as consisting of the following parts: a lamellated tissue, or *cornea proper*, which constitutes the chief bulk of the membrane; in front of it is an *anterior elastic lamina*, on which rests the *conjunctival epithelium*, and behind it the *posterior elastic lamina*, supporting the epithelium of the aqueous humor. The lamellæ of the cornea proper are more than sixty in number, formed of fibres interlacing, and leaving interspaces, which Mr. Bowman was the first to describe; they are of a tubular form and lie in superposed planes, the contiguous tubes of the same plane being for the most part parallel, but crossing those of the neighbouring planes at an angle, and seldom communicating with them. In the eye of the ox, there is not much difficulty in making a successful injection of these tubes with mercury, or even with size and vermillion; but in the human subject it is far more difficult, although Mr. Bowman has seen a tubular arrangement of the interstices here also. Mr. Bowman supposes, and with good reason, that the use of these tubes is to facilitate the permeation of the thick non-vascular cornea, by the fluid portions of the blood, which alone have access to it.

The *anterior elastic lamina* is described as a continuous sheet of homogeneous membrane, perfectly transparent and glossy, and not influenced by acids; in the human eye, its thickness is about 1-1200th of an inch, and to it is due the smooth glistening surface exposed by scraping off the conjunctival epithelium. We agree with the author, that the existence of this elastic membrane will help to explain the tenacity, with which particles of steel adhere to the cornea, although apparently only resting on its surface. Those who have attempted to remove them, can alone form an idea of the firmness of the adhesion. Mr. Bowman alludes to the severity of the pain caused by scraping the cornea, to which we can bear testimony, having on two occasions been unlucky enough to have particles of grit stick in the cornea of our right

eye; and the amount of pain, caused by their removal with a cataract needle, far exceeded what might have been expected. Those troublesome little collections of fluid, called *phlyctenulæ*, are supposed by the author to have their seat immediately under the elastic lamina.

We now come to a portion of the subject of more than ordinary interest, as we think it sets at rest a *vexata quæstio*. A variety of opinions has existed, as to the mechanism by which the adjustment of the eye to distance is effected. Some physiologists have referred it to the action of the ciliary processes, others have thought it caused by an altered convexity of the lens, the result of a muscular movement of its fibres, others again have been of opinion that it was produced by a change of the radius of curvature of the cornea, whilst some have regarded the ciliary zone as the instrument, by which the alteration took place. The last were nearest the truth, but they saw it dimly. The nature of the ciliary circle or zone itself has given rise to difference of opinion; some authorities having described it as a nervous ganglion, others as mere cellular tissue; whilst a few, including the acute Porterfield, have stated it to be muscular. It was reserved for Mr. Bowman, to place beyond doubt the correctness of the latter view. "If," says he, "we examine with a high microscopic power the texture of this part, we discover a fibrous arrangement in the same direction, which would be more obvious, if the fibres were more separate from one another than they really are. The fibres are then seen to be loaded with roundish or oval nuclei, often precisely similar to those of the best marked examples of the unstriped muscle. Lastly, the vessels of the ciliary muscle resemble those of unstriped muscle in abundance and arrangement, and indicate, in the most decided manner, the backward direction of the fibres, from their origin at the junction of the cornea and sclerotica, towards the anterior region of the choroid." (p. 53.) The fibres of the muscle have their origin from the fibrous tissue, coming from the posterior elastic lamina. "The fibrous tissue passes in a sheet backwards to the anterior region of the ciliary processes, and gives origin on its outer surface, or that turned from the anterior chamber, to the fibres of the ciliary muscle, which then clothe the outer surface of the choroid for about one-eighth or one-tenth of an inch, as far as opposite to the ora serrata." (p. 21.) When it is borne in mind, that this muscle has its fixed attachment as much as possible in front of the lens, that it is inserted into the anterior eighth of an inch of the choroid, which is here tougher and firmer than elsewhere, and that it is connected in a special manner with the lens by the ciliary processes, through the medium of a firm tough membrane, and of a strong elastic fibrous membrane proceeding from it nearly to the margin of the lens,—it is difficult to arrive at any other conclusion, than that this is the medium by which the adjustment of the eye to distance is effected.

An elaborate account is given of the structure of the crystalline lens and its capsule, with many valuable remarks on its morbid changes. In comparing the fibres of the human fœtal and adult lens, Mr. Bowman has noticed "that as development proceeds, and the lens becomes wider and flatter, the central planes extend themselves further and further from the axis, and at the same time branch again and again, so as to multiply the segments, into which they divide the lens." (p. 68.) The conclusion drawn from this is, that the multiplication of the mesial planes outwards is a process necessary to the expansion and flattening of the organ, and that it takes place by the deposition of new fibres on the old. A difference of opinion has ever existed as to the precise nature of the liquor Morgagni; some inclining to the belief that it is a natural secretion; others regarding it as the result of disease; whilst a third party have considered it to be merely a post-mortem change. Mr. Bowman is decidedly of opinion that there is no such fluid in the healthy lens; and that when it is found in the cataractous lens, or with the clear lens after death, it is caused by the destruction of the layer of cells which separates, in the living and healthy eye, the capsule from the superficial fibres of the lens. In this opinion we coincide, from observations of our own.

We now pass on to a consideration of the retina, the description of which is regarded by us as the most accurate and most complete which has fallen under our notice.

The elements common to the retina, with other parts of the nervous system, are placed towards its hyaloid surface, and are *gray fibres*, continuations of the nerve tubules of the optic nerve, *gray nervous matter* similar to the cineritious part of the cerebrum, *caudate nucleated globules*, and *agglomerated globules* allied to the nuclei of cells. The elements peculiar to the retina form the external membrane called "Jacob's membrane," and are *columnar rods*, arranged vertically in a single series, and bulbous particles scattered at regular intervals among them. The total absence of nerve tubules in the retina is an interesting point; if a proper section be made, it will be seen that the optic nerve, white in the greatest part of its course,—that is, so long as the tubules have their proper investment of white substance,—becomes gray and semitransparent ere it reaches the retina, and the retina itself never has the white glistening aspect of nerves. This arises from the loss of the investment of white matter, the central fibres remaining, and passing forward to become the gray fibres of the retina. The gray fibres may be seen in the fresh human retina, by looking directly on the inner surface, near the optic nerve, with a power of fifty diameters; they will be seen in bundles of different sizes, anastomosing to form very elongated meshes, in which large nucleated vesicles soon begin to appear. The caudate nucleated vesicles are, we believe, first described by Mr. Bowman; they are in many respects very singular, but their use is at present matter of conjecture. The agglomerated granules form about a third of the entire thickness of the retina, and are disposed in two layers between which, we are informed, exists a thin layer exhibiting neither globules nor any distinct texture. Our space will not admit of our following the author through his remarks on the nature of the *foramen of Soemmering*; but we may observe, that he regards the fold of the retina, described by many authors, as a false appearance, and he has seen in the centre of the yellow spot a minute dot, like a foramen, but a positive opinion is not expressed as to its character.

Until very recently, the vitreous humour was supposed to consist of delicate filamentous tissue, so interlaced as to form cellular spaces, in which the fluid was supposed to be contained. Pappenheim, however, in 1842, announced that the vitreous body, when treated with a solution of carbonate of potass, exhibited a series of layers, like those of an onion. In 1843, Brücke pursued these inquiries, and also arrived at the conclusion, that the vitreous body is made up of concentric laminæ, enclosed one within another. Hannover likewise devoted much time to the inquiry; and announced that, although in the cat, dog, ox, and sheep, the concentric laminæ existed, yet in man the humour was composed of segments, like those of an orange. At this point, the investigation was taken up by Mr. Bowman, who submitted the vitreous body to the action of chromic acid, and of diacetate of lead, and also froze it. The following are the conclusions at which he has arrived, from his careful experiments. "If I may venture to deduce a conclusion from the experiments I have detailed, I would say that the construction he (Brücke) has described, is not in the least supported by the experiments with the salt of lead, which may be made to indicate a lamination in any direction at the pleasure of the anatomist; but, nevertheless, there remains good reason for supposing that there do exist certain layers in the vitreous substance, capable of being rendered visible by art." (p. 107.)

We must now bring our notice to a conclusion, not because the subject is exhausted, but because our space is limited. There are many valuable remarks on the Morbid Anatomy of the Eye, illustrated by cases; but for these, and for much useful information, we must refer to the book itself, which is regarded by us as a valuable addition to ophthalmic literature.

A Treatise on the Cure of Ulcers by Fumigation. By George Alfred Walker, Surgeon. pp. 112. London: 1847.

There are few diseases more perplexing than Ulcers, from the obstinacy with which they at times set at defiance the means adopted for their cure. Hence result the number of publications, that have been devoted to the subject; scarcely a year passing without the appearance of several works, most of them professing to have cut the gordian knot, and asserting with confidence that the plan recommended is certain of success. The object of the volume before us, is to place before the profession a plan of treatment, not novel in principle, but in some respects new as regards the mode of application. This treatment consists in exposing the ulcer and adjacent parts to the fumes of sulphur and iodine, volatilized by heat; and it is from the combined influence of iodine, sulphur, and temperature, that a healthy action is to be expected in the diseased parts. That the author is well satisfied with his success, is shown by the following passage. "It is now many years since I first tested these powers, and my experience enables me to assert that this new mode of treatment, where properly directed and perseveringly applied, is not only superior to any other with which I am acquainted, but absolutely capable of mastering, in a short time, almost any case of ulcer fairly submitted to it." (p. 81.) The apparatus used is described as exceedingly simple, but to us it seems rather complicated; and very many points have to be attended to, in the management of each case. There is one allusion to which we would draw the attention of the author, in order that it may be corrected in another edition, namely, the reference at page 65 to "the engine-room of my establishment." We feel sure that it was not intended as a puff, but it might leave an unfavourable impression on the minds of some persons.

In very obstinate cases, this plan of Mr. Walker would be worthy of a trial.

China and the Chinese. By Henry Charles Sirr, M.A., Barrister-at-Law. In 2 vols. London: 1849.

We do not, as a general rule, profess to notice non-professional works; but we are induced to make an exception in favour of that before us, from its containing much curious information respecting the knowledge of anatomy and surgery, possessed by the Chinese. The general opinion entertained as to their ignorance of the structure and functions of the human body, is fully confirmed by Mr. Sirr, who gives the following example of Chinese semeiology:—"If the pupil of the eye be of a white colour, then the disease lies in the lungs; if red, then it lies in the heart; if yellow, in the spleen; if green, in the gall; if black, in the kidneys; but if the whole eye be of a yellow colour, that can neither be described nor named, then the cause of the disease lies in the middle of the chest." (Vol. ii, p. 81.)

The following mode of treatment of dislocations of the spine, will probably be new to many of our readers:—"The Chinese have invented a back of fir wood, which is thickly padded with cotton; this is attached to the back of the patient by bandages, which pass over the shoulders and round the body. Previous to the application of this stay, the sufferer is made to lie down upon his face; the assistant places his feet upon the patient's shoulders, whilst the surgeon, by means of a roller of cotton, raises that part of the spine where the injury has been received, and by a series of pressures, applied in different directions and in varying degrees, re-adjusts the displaced bones. The artificial back is then securely fastened on the person, being worn constantly, until the parts have regained their healthy condition." (Vol. ii, p. 71.)

We regret that the great demands upon our space prevent our making other extracts from these entertaining volumes, which, however, we cordially recommend to our readers, as containing a vast amount of information on every subject relating to China.

LECTURES ON THE CAUSES AND TREATMENT OF ULCERS OF THE LOWER EXTREMITY, delivered at the London Hospital during the Summer of 1848. By GEORGE CRITCHETT, Esq., F.R.C.S., Surgeon to the Royal London Ophthalmic Hospital, etc. pp. 121. London: 1849.

This is a very sensible work, founded on sound practical knowledge. The treatment especially recommended, is that of affording support to the diseased limb, and inducing healthy action in the Ulcers, by well-adjusted strapping. MR. CRITCHETT points out the conditions, in which this proceeding cannot be used with propriety; and we agree with him as to the advantage of modifying the treatment, according to the peculiarities of each case. His observations on the management of irritable ulcers are just; the recumbent posture, the inclined plane, and soothing applications are here indicated, and of these latter, "poultices of various kinds (though it is the fashion for Young Surgery to condemn them wholesale), often afford relief when all else fails to do so, and are still, I am convinced—in spite of the obloquy and ridicule now cast upon them by the modern school—by far the best method of obtaining uniform warmth and moisture to an inflamed surface." We think with the author, that poultices by no means deserve the contempt with which the advocates of more elegant, and we may add, more expensive appliances, regard them; if well made, and renewed at proper intervals, they are most useful and most comfortable applications.

Mr. Critchett differs from Mr. Skey, as to the benefit derived from the use of opium in the treatment of ulcers; having used it in above forty cases, he has arrived at the conclusion, "that it is utterly valueless as a healing agent, in the treatment of ulcers of the lower limb." In fact, there is no one remedy which is applicable to all cases; each case requires careful study, and general and local remedies, modified according to the state of the general health, and the variety of causes which exert an influence upon those troublesome companions.

There is one point on which we are compelled to animadvert; and that is, the impropriety of publishing the names and addresses of patients. It surely was unnecessary to make the world acquainted with the fact—that "Mrs. Dowding, who keeps a circulating library in Cannon-street, Commercial-road," had suffered from a foul ulcer; or that "Thomas Kedalle, residing at 10, Paul's-alley, Cripplegate," came to Mr. Critchett, with a note from his friend and former teacher, Dr. Cobb, and four ulcers on his right leg into the bargain. This is straining accuracy too far, and in our opinion, is decidedly objectionable.

With this exception, we can speak in high terms of Mr. Critchett's little volume, which shows a thorough acquaintance with the subject of which it treats, and is likely to be extremely useful.

A PRACTICAL TREATISE ON MORBUS COXARIUS, OR HIP-JOINT DISEASE. By WILLIAM C. HUGMAN, M.R.C.S., Surgeon to the Verral Institution for the Treatment of Spinal Disease, etc.

The object of this work is to prove the advantages derivable, in disease of the Hip-Joint, from perfect quiet in the prone position, that is, with the face downwards. A full account is given of the apparatus, by which the object is attained; and, as we agree with the author, that absolute freedom from motion of the joint is a great desideratum in such cases, the means by which this can be accomplished is a matter of much importance. We cannot compliment the author on the artistic skill, with which the illustrations are executed, for they are indeed curiosities in their way; the patient on the apparatus looks anything but comfortable. If we had our choice of long confinement, we would rather lie on our back than on our face; and the young lady in Plate III looks as if she would be of the same opinion.

The Verral Institution to which the author is surgeon, is, we perceive, for the relief of spinal distortions; and this leads us to remark that, in our opi-

nion, such deformities would be far less frequent, were *fencing* more generally the fashion. The attitudes assumed in fencing improve the carriage of the body, give it just poise and balance, strengthen the muscles of the back and loins, and directly expand the chest. We know of more than one case of lateral curvature removed, whilst under the tuition of that able *artiste*, M. Léon Gillemand; and there is no reason whatever why ladies, as well as gentlemen, should not be instructed in so graceful and invigorating an exercise as the use of the foils.

ERUPTIONS OF THE FACE, HEAD, HANDS, ETC., WITH THE LATEST IMPROVEMENTS IN THE TREATMENT OF DISEASES OF THE SKIN. Illustrated with coloured plates. By T. H. BURGESS, M.D., Editor and Translator of *Cazenave's Manual of Diseases of the Skin.* pp. 254. London: 1849.

Dr. BURGESS is already favourably known to the profession as the editor of Cazenave's excellent manual. The present original work is a highly practical, and therefore a very valuable contribution to the Pathology and Treatment of Skin Diseases.

The idea of describing the different diseases in groups, or regions, is a good one, and, for practical purposes, has considerable advantages over the more ostentatious systems of classification, which ever vary as knowledge advances, or opinions change. Certain affections shew a predilection for certain regions: thus, Acne, Sycosis, and Lupus, are almost peculiar to the face; Eczema, Scabies, and Psoriasis, infest the hands; and all Skin Diseases become modified in character, when they manifest themselves on the head or other parts covered with hair. As the number of cutaneous diseases occurring in certain regions is limited, a cursory glance at the notices belonging to any region or group would always bring the inquirer to the particular description. The common cutaneous affections of the head and hands are about six or eight in number, and those of the hands do not exceed a dozen.

The slighter affections Dr. Burgess judiciously speaks of with great brevity, that he may have ampler room to bestow on the more troublesome and more serious maladies: such as Acne in women, Favus in children, Eczema, Impetigo, and the Syphiloid eruptions. The plates are faithful transcripts from life; and the whole tone of the book is that which candid and patient clinical study can alone impart.

Dr. Burgess does not adopt the vegetable theory of Favus maintained by two eminent pathologists, Drs. Gruby of Vienna, and Hughes Bennett of Edinburgh. This is rather bold, after the chastisement inflicted on Mr. Erasmus Wilson by a northern reviewer for similar incredulity. "We beg him" (Mr. E. Wilson), said *The Edinburgh Monthly Journal*, "to pay more attention to the labours of his contemporaries, and to avoid insulting the understandings of his readers by asserting, that *Tinea Favosa* is not of vegetable origin, and not contagious, when scientific Europe knows it to be the one, and direct inoculation has proved it to be the other." [May 1848, p. 829.]

We hope that we do not "insult our readers," when we intimate our scepticism in the vegetable *origin* of Favus: and venture to quote the remarks of Dr. Burgess on this subject:—"Favus, like ringworm, is considered by recent microscopical observers, to be a disease of vegetable origin; again mistaking a secondary product for an element of disease. That the parasitic fungus is to be found at a certain period of the eruption, and may be distinctly seen through the microscope, there is not the slightest doubt,—vegetable products may be seen also in cheese, in a certain state of decomposition:—but that it is the *origin* of the disease, the source whence it springs, there is not the shadow of a proof. However, the vegetable theory furnishes too convenient a *fons malorum* for settling some of the most difficult and obscure points in general, as well as in cutaneous pathology, to be readily laid aside, and will, therefore, no doubt, have its day." (p. 183.) Dr. Burgess' valuable *work* concludes with an excellent selection of forms of prescriptions, for *diseases of the skin.*

CRITICAL DIGEST OF THE BRITISH AND FOREIGN MEDICAL JOURNALS.

ANATOMY AND PHYSIOLOGY.

STRUCTURE OF ARTICULAR CARTILAGE.

Dr. Joseph Leidy has published, in the *American Journal of the Medical Sciences* for April 1849, the results of his researches into the Intimate Structure and History of the Articular Cartilage. As his observations appear to possess considerable merit and some points of novelty, we will lay them before our readers with but little abridgment.

Adult Articular Cartilages are closely moulded upon the extremities of the bones; and, when removed by maceration in dilute acid, present a rough surface corresponding to that of the bone. Their free surface is smooth and glistening, exactly fits the surface of the opposed cartilage, and is bathed with synovia. They vary in thickness in different joints, and in different parts of the same joint. When broken, which requires some force, they present a fracture always perpendicular to the surface, and in some cases laminated. They are destitute of vessels, lymphatics, and nerves. The vessels near the edge form loops, and those which approach the surface are separated by a thin lamella of bone (Toynbee.) The intimate structure presents organic cells, or cartilage-cells or corpuscles, and an intercellular substance or matrix.

Cartilage Corpuscles. These are solid nucleolo-nucleated cells, rarely isolated, but most usually in groups of two up to twenty-two, arranged in single, double, triple, or quadruple rows, perpendicular next the surface of attachment, more or less oblique in the centre, and finally becoming parallel with the free surface, when approaching it. The groups increase in number from the attached to the free surface; and, in the latter situation, single or isolated cells are more common than elsewhere, while the deeper groups contain the greatest number of individual cells. The cells are rounded when single, or at the extremities of a group; but their surfaces in contact are flattened. The deeper cells average in size 1-2000th of an inch in length, by 1-2270th in breadth; the superficial ones are more flattened parallel with the axis of the cartilage, and are about 1-900th of an inch long; their edges, which appear very narrow, being on an average 1-2270th of an inch in thickness. The cell-wall appears blended or fused with the intercellular substance, and can be distinguished only in the very early condition of the cell. The cell-contents usually consist of a translucent, homogeneous, or at most an indistinctly and very minutely granular substance, with a more or less central mass of distinctly coarser and darker granular matter. This mass contains a transparent round or oval nucleus, which is brought into view and coloured brown by the application of tincture of iodine; it also frequently contains fat-granules or globules. In the superficial cells it averages the 1-2900th of an inch, in the deeper, 1-3448th of an inch in diameter. It is generally wanting in the more superficial layer of cells, which are filled with finely granular contents, much resembling fat granules. In these superficial cells, the nucleus is large, round, or elliptical, very finely granular, and contains a transparent nucleolus. In some of the last-named cells, Dr. Leidy has observed an arrangement of the granular matter in a circular form, at a short distance from the nucleus, giving the latter an appearance of being contained within a larger nuclear body. This appearance can in general be but faintly seen. In other cases, the superficial cells are more similar to the deeper cells, except that they are more flattened, and the internal granular mass is larger.

Not unfrequently, the most superficial layer of the cartilage presents large flattened cells or cell-groups, as if rubbed out by attrition; and less frequently, Dr. Leidy has observed beneath the free surface, and too deep to be influenced by friction, large and flattened cells, usually isolated or in pairs, finely and indistinctly granular, without apparent nucleus, or with the apparent formation of a nucleus from aggregation of the finer granules around a large transparent nucleolus. Are these cells in the process of development?

Cartilage Matrix is most abundant in the deeper part, and is in thin sections translucent, but less so than the cell-contents, and usually has a faint yellowish hue. It has generally been described as a homogeneous, hyaline, or finely granular substance; but Dr. Leidy is fully convinced, from numerous and carefully repeated observations, that it has a filamentous structure. The filaments are exceedingly fine, but possess considerable strength, and are pretty uniform in size, having an average measurement of the 1-25000th of an inch in diameter. When viewed with light thrown on them with considerable obliquity, they appear finely granular, each consisting of a row of granules. Acetic acid produces no apparent influence on them; potassa renders them more translucent and faint, and iodine stains them yellow. These filaments lie parallel, and adhere very tenaciously, so that they are very difficult to be demonstrated, though they may be occasionally seen at the ends of a torn shred of cartilage. But if a fine shred be torn off from the articular cartilage of a bone which has been macerated in dilute hydrochloric acid, and examined with a one-fourth or a one-twelfth object-glass, numerous detached and exceedingly delicate spider-thread-like filaments will be detected along the whole length of the edge of the shred. In tearing off fine shreds, a group of cells will be frequently found torn through; and besides this, straight fibres are frequently torn loose in the part of the cartilage where the matrix is most abundant, without coming into contact with cell groups; hence the fracture of articular cartilage in a definite direction seems to depend, not on the arrangement of the cell groups, but entirely on the filamentary arrangement of the matrix. The membranous layer, by which the fragments of articular cartilage adhere at the free surface when broken through, was formerly believed to be the synovial membrane. Modern anatomists believe its membraniform condition to depend on the arrangement of its cell groups parallel to the surface, but Dr. Leidy finds this to result from the structure of its matrix, which has a filamentary arrangement, the filaments running at right angles to those of the deeper cartilage, and parallel to the surface. The filaments are arranged vertically in the deeper part, but parallel to the surface in the superficial stratum; and this seems to determine the direction of the cells.

Synovial Membrane. Dr. Leidy has always failed to detect this, in the adult, on the free surface of the articular cartilage, or even the appearance of a basement membrane. It appears to terminate at the circumference of the cartilage, a very little beyond the vascular circle. In the fœtal state, it distinctly exists; and may be readily detected by its flattened epithelial nucleated cells, beneath which is a transparent homogeneous basement membrane. But after birth, in the progress of growth of the articular cartilages, it appears to be destroyed by pressure and attrition, probably also by the retiring of the vessels of the surface towards the circumference. It appears to be progressively removed from the centre towards the circumference, but always to remain a little in advance of the vascular circle.

Occasional Peculiarities have been met with by Dr. Leidy, in the form of minute lacunæ, from 1-1200th to 1-3125th of an inch in length, by 1-6250th of an inch in breadth. They are lenticular in outline, and most numerous at the deeper part of the cartilage. He has also sometimes seen fibres or columns of bone, penetrating the structure of the cartilage, near the surface of attachment. These are not derived from the bone itself, for they are invariably arranged parallel to the surface. They are quite uniform in shape and structure, being compressed, cylindrical, in transverse section presenting an ellip-

tical figure, the long diameter of which is placed parallel to the surface of the cartilage, or at right angles to the filaments of the matrix in which they are formed. They are not numerous, and vary from a size not exceeding a group of five cells to the size of four or five such groups. They are concentrically laminated; and also possess a radiated conformation, resembling somewhat the structure of an Haversian ossicle, but presenting neither the canal nor the Purkinjean corpuscles.

Development and Growth of Articular Cartilages. The articular cartilages, as a distinct structure, are not perceptible so long as the epiphyses and articular extremities of the bones are not ossified; consequently they do not exist during fœtal life, nor for a considerable period after birth. At birth, if an epiphysal extremity of a long bone be cut vertically through, it will be observed that the cartilage of the epiphyses extends to the synovial membrane, and that there is not the slightest trace of a line of demarcation between the two varieties of cartilage. If the section be more carefully examined, a number of branching canals will be observed ramifying through the cartilage, many of which approach its articular surface, but are in all cases separated from it by a thin lamina of the cartilage, containing no canals. This thin lamina is the first appearance of the articular cartilage, but presents no distinction of structure at this period from the mass of cartilage of the epiphysis. The canals of the epiphysal cartilage contain blood-vessels, which, according to Mr. Toynbee, have a very peculiar disposition, consisting of arteries terminating in dilatations, or in convoluted branches, from which the veins arise. In the process of ossification and increase in size of the epiphysal cartilage, the developing articular cartilage appears to be pushed before it. This is the result of an interstitial growth, depending upon the division of the primary cartilage-cells, the probable development of others, and the increase of the matrix or intercellular substance. When the articular surface cartilage of a cartilaginous epiphysis is examined microscopically, it is found to have all the characters of the latter; and, at an early period of fœtal life, consists of a translucent, hyaline substance, in which are diffused, with considerable uniformity, rounded or elliptical, isolated, nucleolo-nucleated cells, separated from one another by interspaces less than their own diameter. The vary to a moderate degree in size, and average about the 1-1785th of an inch in diameter. The cell-contents form a mass rather darker than the intercellular matrix, the reverse of what is the case in the perfected articular cartilage. They are finely granular, with an intermixture of coarser and more defined granules, some of which appear to be oleic in character. The nucleus is round or oval, varies a little in diameter, averaging about the 1-3570th of an inch, and is very finely granular in structure. Sometimes there are two nuclei, sometimes separated and distant, sometimes in contact, flattened upon the opposed sides, and apparently having originated from the division of a single nucleus. The nucleus contains a more consistent, translucent nucleolus, readily brought into view by the tincture of iodine, and measuring about the 1-11111th of an inch. The intercellular substance is comparatively soft, very translucent, and homogeneous. As the articular cartilage advances in its development, the intercellular matrix increases in quantity, separating the cells to greater distances apart, and acquires a firmer consistence. It becomes faintly granular; and this appearance after a time becomes more decided, though indistinct at any time without a good defining power. Finally, the peculiar filamentous arrangement appears, described in a previous part of this memoir. But the question arises, how does this intercellular substance increase in quantity? Is it a direct deposit of imbibed matter from the liquor sanguinis in the vicinity of the cartilage, or is it produced through the agency of the cartilage-corpuscles, or organic cells of the tissue? Recollecting that the liquor sanguinis does not contain dissolved cartilage, we cannot suppose it to be a direct deposit; but may not the cartilaginous molecules already produced, convert an assimilable substance into molecules of a similar

character, chemical and physical? The latter opinion is probable; but it is easier to suppose it to be formed from imbibed albumen, through the agency of the cartilage cells, in the same manner that it originally results from the albumen ovi, probably through the agency of cells,—the earliest cartilage cells, which have been the offspring, retaining part of the organizing force of the Purkinjean vesicle. As it is certain, that cartilage tissue is produced from albumen, it is worthy of inquiry, whether the organic cells of the cartilage are capable of fixing a material thus transformed in their vicinity. If it can be demonstrated that such a power exists in organic cells in any part of the organic kingdom, we may feel assured that it prevails throughout. Turning back, then, in vitality's great book, to the first few pages, we discover some very simple expositors of the question at issue. Thus, if we examine several of the families of Chlorospermeæ, the oscillatoriæ, ulvaceæ, nostochineæ, etc., we find numerous zooid plants, some of the simplest forms in the organic kingdom, consisting of single rows of organic cells, enveloped in a mucoid substance, and swimming in water or flourishing in humid situations. When the green spores, (single organic cells filled with endochrome and containing a nucleus,) are discharged from a parent cell, they accumulate and fix around themselves a mass of mucoid substance from the nutritive matter floating in the element around them. The spore develops a perfect plant, a mere filament or row, or a lamina of cells, which continues to accumulate mucoid matter around it, until the latter is frequently several times the diameter of the plant itself. Retaining its organic activity, it produces spores, which are to be discharged, and undergo the same progressive changes. Perceiving, then, that these cells can collect and fix matter around them, and continue to operate upon imbibed nutritive fluid, it is rendered probable that an analogous process may be carried on in the denser cartilage, since the latter, as is well known, is capable of imbibing nutritive fluid. Whether the surrounding matter is formed within the cells and then exosmosed, or whether the cell-life extends its formative power beyond the precincts of the cell-wall, remains a question, but both are probable. The cartilage cells, at the early period of development, are easily detached from the matrix, but at a later period the cell-wall fuses or blends itself with the intercellular substance; but even after this, the granular cell-contents are easily detached in a single mass, appearing to be retained together by a delicate protoplasmatic envelope, corresponding to the primordial utricle of vegetable cells. Of the existence of such a structure in some animal cells, Dr. Leidy has satisfied himself by observation. After the cartilage matrix has taken on itself the granulo-filamentous structure, the cartilage-cells increase in number by division, and probably also by the origination of new cells. In studying the development of the groups of cells of the perfected articular cartilage, the steps of progress, as noticed at several periods during the growth of the latter, appear to be as follows:—The simple isolated cartilage-cells are found to become somewhat elongated, then at the sides to present the appearance of an indentation. The nucleus has a central position; and then a faint dividing line, more translucent than the other parts of the cell, is observed crossing the short diameter of the cell, resembling somewhat the transverse line of dehiscence of an ovisac. By varying the focus of the microscope, it is found that this line penetrates as a plane through the cell. The next change which is remarked, is the retiring of the granular cell-contents from the inner parietes of the cell-wall, excepting where in contact with the dividing line of the cell. The cell-wall has now become blended with the intercellular substance, and the latter also occupies a position between the inner surface of the cell-wall, with which it also blends, and the retiring cell-contents. The cell-contents at this period are distinctly divided into two masses, corresponding to the previously mentioned line passing through the cell; and each mass contracts itself, with the contained half of the original nucleus, towards the centre of its

respective cell. From the uniformity with which the granular cell-contents contract, holding all contained parts together, granules, nucleus, and fat globules, Dr. Leidy is strongly impressed with the idea, that they have a protoplasmatic envelope or primordial utricle. In vegetable cells, we frequently observe the same mode of retiring of the granules of endochrome, retained together by the delicate, transparent, mucoid envelope, the primordial utricle; and, as is well known, this may be produced by artificial means, which is also the case with the cartilage-cells, for the cell-contents slightly and very gradually contract in a single mass, upon the application of tincture of iodine, or even under the long-continued imbibition of water. Whether the division of the nucleus precedes that of the cell, or the reverse, still remains a problem. Cartilage-cells are not unfrequently observed, containing a nucleus apparently in progress of division, and others, with a pair of nuclei near each other, and flattened upon the opposed sides, having the appearance as if the result of division of a primitive nucleus, without the slightest trace of any disposition of the cells to divide themselves. In other instances, the cells present a slight parietal indentation, without any similar appearance of the nucleus; and in all other cases, when the cell exhibited signs of division, a corresponding change was invariably observed in the nucleus. The pair of cartilage-cells, which have originated from the primary cell, increase in size by the assimilation of nutritive matter, and undergo the same division as just described, until groups are formed as found existing in the perfected cartilage. The cell-contents continually retire, but at the same time appear to partake of the general nutrition of the cell, until in the cell-group we find the masses generally central, frequently irregular in outline, and containing more or less oil-globules, and one or two nuclei; in this state they have been generally mistaken for the nuclei of the cartilage cells. The cells, in their progressive division, do so generally in the same line; but also very frequently divide laterally, so that the pair of cells resulting from the division of the first, may either form a row of four or a group of four, and continue in this manner. The cause determining the arrangement of the cells into rows, instead of masses, has already been referred to; the least resistance to their extension being parallel with the filaments of the cartilage matrix. The irregularity which exists in certain of the cell-groups, especially in the stratum lying about one-fifth of the thickness of the articular cartilage below its free surface, probably depends, in some degree, upon the pressure of the opposed cartilages of the joints. It is not meant by this, that a sudden push would knock the deeper groups out of a vertical line; but, during the progress of division of the cells and extension of the groups, a frequently repeated or moderately continued pressure, exerted upon the free surface of the cartilage, would give them a tendency to incline to one or the other side; and hence their obliquity, or curved or irregular character from the ordinary line, in a part of the cartilage most influenced by the pressure.

Nutrition of Articular Cartilages. When an animal or plant is small, simple in structure, or possesses few or minute, or very simple organs, it is sufficient that the body or organs be bathed in a nutritive fluid, which they may readily imbibe, to present all the phenomena of vital action; but when the being becomes massive or complex, from the greater number and size of its organs, blood-vessels become necessary, or rather channels which divide the masses into a surface of contact for the nutritious fluid, of greater or lesser extent, depending upon the degree of organic activity displayed by the organs, which is indicated by the amount of nutritive fluid they require. If, then, we perceive an algous plant, or simply constructed animal, capable of obtaining nutritive matter from the water in which it is bathed, or the lichen from the rarer atmosphere in which it exists, without blood-vessels pervading their structure, is it not probable that in more complex animals we may have simple structures nourished in a similar

manner? The articular cartilage appears to be such an one; destitute of blood-vessels, it is bathed by fluid exosmosing from the vessels beneath its attached surface, from the circulus vasculosus at its circumference, and especially by the synovia upon its free surface. The idea of synovia contributing to the nutrition of the cartilage, may at first view appear preposterous, but, with a little consideration, will appear at least quite probable. We find all the conditions of a nutritive fluid fit for the articular cartilage in the synovia, which is particularly rich in albumen, the main element of nutrition of the cartilage. From several experiments, Dr. Leidy has found the articular cartilages quite capable of imbibing the synovial fluid. He collected the synovia from several joints of a calf in a vessel; and, upon drying an articular cartilage, and then immersing it in the synovia, he found it gradually to imbibe the fluid, and resume its former appearance. Somewhat similar experiments he tried upon several living animals,—a rabbit and a pigeon. Another experiment showed, that imbibition takes place with considerable power in this tissue. He took four pieces of articular cartilage, each about one inch square, and two lines in thickness, permitted them to dry, by which they shrunk to a little more than one line in thickness, placed them in a vessel of water, and rested upon them a stage loaded with nearly ten pounds. The next day, upon removing the stage, he found the pieces had resumed their former bulk, thus having imbibed the water with a power sufficient to raise ten pounds nearly one line; and he has no doubt the power is much greater, but how much more so, it was not convenient at the time of his experiment to determine. But, besides mere imbibition, we have all the conditions of that remarkable modification of the phenomenon, endosmosis, present in the articular cartilage, and even to its greatest intensity. Dutrochet proved long ago, that albumen dissolved in water produces endosmosis with a degree of force, not paralleled by any other organic substance, under ordinary circumstances. The synovia presents a highly inspissated albuminous fluid, separated by the articular cartilage from the much thinner liquor sanguinis of the vessels beneath. In such a condition, the power of imbibition of synovia being known to exist in the living animal, a constant endosmosing current must exist from without, and an exosmosing one from within. During the passage of the currents of fluid through the articular cartilage, nutritive or organizable in character, if any activity still exists in the life-seats, the phenomena of nutrition must be the result. From the microscopic appearance of the cartilage, we observe, that from various interstitial changes, the organic cells must retain at least a part of their wonted activity. When we consider the amount of rubbing of one articular surface upon another in a movable joint, like that of the knee or hip, under the pressure of the superincumbent mass, from year to year, we cannot help thinking that the wear of the articular cartilages must be more considerable than is generally supposed, although we really perceive but the slightest degree of diminution after a lapse of many years. A walk of some of some miles per day, through several years, will detach molecules enough from the surface of the articular cartilages, although they are kept constantly lubricated by a substance so well adapted to remove friction, to require a renewal of structure through the process of nutrition. That such a repair is constantly going on is also rendered probable, by the condition of the more superficial stratum of the articular cartilage, in which are found cells presenting the appearance of having been later formed than those more deeply situated, and this becomes more strikingly the case as we approach the free surface of the cartilage. In the deep part of the cartilage the cell-groups are large, the cells are apparently much diminished in organic power by frequent division, and the intercellular matrix is abundant, all betokening an earlier formation than the part lying more superficial to it, in which latter the cells are apparently in the progress of subdivision and formation of groups, and the matrix in comparatively small quantity, as in early cartilage. And then the occasional appearance of the development of new cells

in the more superficial cartilage, will still favour the idea of an interstitial nutrition, which though slow, is sufficient to compensate for the wear of the cartilage.

Pathological Conditions of the Articular Cartilages. As the articular cartilage contains no blood-vessels, it is not liable to inflammation; but we frequently find cases, in which there is an appearance of ulceration or corrosion of the surface of less or greater extent, or it may present numerous minute, disconnected fibres projecting from the surface of the bone, like the pile of velvet, or it may be entirely removed. All these changes may take place from either surface of the articular cartilage. The most prevailing opinion among pathologists of the present day, is that these changes are the result of solution, generally in purulent matter; and from the observations of Cruveilhier, it appears they are more rapid, if the fluid acting upon the cartilage be in a state of putrescence. While the cartilage is bathed in pus, from the catalyso-disorganizing nature of the latter, it may be gradually corroded from the surface; and from an exosmotic current of the serous fluid of probably modified pus (scrofulous), filaments may be dissolved out and cell groups detached, or probably disorganized and dissolved out, leaving the remainder of the cartilage in the form of a layer of disconnected filaments, like the pile of velvet, as already alluded to. Should the pus or other catalyso-disorganizing fluid (modified synovia), become putrescent, then must the destruction of the cartilaginous structure be necessarily more rapid, not only from the same action being instituted in the molecules, forming the surface of the cartilage, but from imbibition; it will also set up the same action interstitially, and will be aided by the death of the life-centres, the cartilage-cells, for putrescence is ever deleterious and destructive to cell-life. Even the infusorial animalculæ and algous plants, which are generally believed to thrive most in water containing putrescent organic matter, with the exception probably of Monads and Vibrios, are absolutely destroyed by it, and it is not until the putrid exhalations cease, that they become developed within the fluid. So long as a lamina of cartilage is left upon the surfaces of the bones of a joint, and the life of the cartilage-cells is not destroyed, it is probable there may be the power of a very slow regeneration of lost substance; but if the cartilage be entirely removed, as the agents of its formation, the cells, are gone, there can be no restoration. If the bony surfaces be exposed, and pus or other catalyso-disorganizing fluid be present, the destruction of the bones is the result; if the formation of such fluid cease, and what has been formed is removed, and effusion of fibrin from the vessels of the osseous structure take place, we may have anchylosis, or irregular exostoses, from subsequent organization and deposit of osseous salts. If fibrinous matter be not effused, the vessels of the osseous structure, excited by the friction of one bony surface upon the other, may deposit a lamina upon the rubbing surface as hard as dentine, which, from continued friction, becomes highly polished. In the rupture of an articular cartilage, it is said, the fragments never unite, which fact was formerly frequently advanced in support of the non-organization of the tissue. Muscular substance, when destroyed by violence, is not restored; a lichen cut into two will not unite at the edges; nor will algous plants unite when divided. The nutrition of the parts continues, as is the case with the fragments of the articular cartilage; but two opposed surfaces of articular cartilage might almost as well be expected to unite in a joint in which there is little motion, as the two broken edges of one. When granulations occur upon the surface of an articular cartilage, which is extremely rare, they arise probably from the effusion, from the circulus vasculosus of the joint, of fibrin, extending upon the surface of the cartilage and agglutinated to it.

DEVELOPMENT OF THE PURKINJEAN CORPUSCLES IN BONE.

Dr. Leidy believes the opinion of Schwann to be correct, that the Purkinjean Corpuscle of Bone is derived from the pre-existing cartilage-cell, and that the canaliculi are prolongations or protrusions of the cell-wall. He says that the mode of development of the Purkinjean corpuscles, as noticed upon the upper or posterior border of the os frontis, is briefly as follows. After the primitive ossific rete has been formed from the deposit of the osseous salts, enclosing groups of cartilage-cells in the areola, the further deposit takes place in a fibrous or line-like course from the parietes of the areola of the primitive osseous rete, in the interspaces of the cartilage-cells nearest to, or in contact with, the sides of the areola. At this period, the cells shoot out or extend their canaliculi between the fibrillæ just formed; and then the cell-wall and the continuous walls of the canaliculi fuse with the translucent, homogeneous, or hyaline substance of the cartilage existing between the cells and the osseous fibrillæ, and with the fibrillæ themselves, by the deposit of the osseous salts. The period of the formation of the canaliculi appears to be quite definite, occuring during the deposit of the osseous salts, and not before. To such an extent is this the case, that he has noticed, in several instances, cells which had formed their canaliculi upon the side which was ossified, while upon the other side, he could not distinguish any trace of them. During the whole time of the formation of the Purkinjean corpuscles, the nucleus remains unchanged; at least, no change is perceptible in it beneath the microscope; and, by applying tincture of iodine to the preparation, which turns the nucleus brown, the perfected Purkinjean corpuscle may be detected, corresponding to the nucleus of the remaining unossified cartilage cells, not only in granular structure, but also in its measurements. After the Purkinjean corpuscle has been formed a short time, the nucleus dissolves away or disappears. The newly formed Purkinjean corpuscle is about the same size as the remaining unossified cartilage-cell, as indicated in the following measurements. Size of cell of temporary cartilage, from the unossified os frontis of a human embryo, 1-1886th of an inch; nucleus, 1-3125th of an inch; nucleolus, 1-8333rd of an inch; Purkinjean corpuscle, 1-1865th of an inch; nucleus within the same, 1-3030th of an inch.—[*Proceedings of Academy of Natural Sciences of Philadelphia*, November 1848, as quoted in *American Journal of Medical Sciences*, April 1849.]

ARRANGEMENT OF THE AREOLAR SHEATH OF MUSCULAR FASCICULI—ITS RELATION TO THE TENDON.

Dr. Leidy thinks that the arrangement of the filaments of fibrous tissue, forming the sheaths of the muscular fasciculi, and their relation with the tendon, have not been properly pointed out. From repeated observations, he has found that the filaments of fibrous tissue cross each other diagonally, around the muscular fasciculi, forming a doubly spiral extensible sheath. None of the filaments run in the direction of the length of the fasciculi, and but few are transverse. Many of the filaments of a sheath form interlacements in the same diagonal manner, with the filaments of the sheaths of neighbouring fasciculi. This arrangement is readily distinguished, if several fasciculi be drawn slightly from each other upon a plate of glass, and the intervening areolar tissue be viewed under the microscope. When the filaments reach the rounded extremities of the fasciculi, they become straight, and in this manner conjoin with the tendinous filaments originating at the extremities of the muscular fibres. The importance of this arrangement can be readily understood; from the diagonally crossing course of the areolar filaments, comparatively inelastic in themselves, the sheath is rendered elastic, thus permitting the muscular fibres freely to move without their action being interfered with; while at the point of attachment of the fasciculi, where any elasticity would

be worse than useless, from the fact, that part of the muscular action would be lost in the mere extension of an elastic substance, we find the filaments arrange themselves so as to become part of the inextensible tendon.—[*Proceedings of Academy of Natural Sciences of Philadelphia*, November 1848, as quoted in *American Journal of Medical Sciences*, April 1849.]

PRACTICE OF MEDICINE AND PATHOLOGY.

TREATMENT OF CHOLERA IN SIX OF THE PARISIAN HOSPITALS.

The *Gazette Médicale* of May 12th and 19th, contains the following account of the practice adopted by the medical officers of six of the Parisian Hospitals, in the treatment of Cholera.

I. Hôtel-Dieu. The patients who enter this institution are of all ages and of both sexes, and mostly destitute. The hospital is generally supposed to be one of the most unhealthy, being situated on the Seine, badly ventilated, and over-crowded. The medical practice is based on anatomy and physiology, as may be easily imagined when we remember that Chomel, Louis, and Rostan, teach and practise there. Their treatment is hence to a great extent uniform, and is of the following character.

For diarrhœa, most employ opium and its preparations, and astringents; and all reject emeto-cathartic remedies. To allay vomiting, they give ice, iced Seltzer water, and the anti-emetic potion of Rivière. Depression is treated by various internal and external stimulants; pain, by calmatives, and in certain cases by revulsives; the loss of warmth, by various calefacient remedies, one using the vapour bath, another the hot air bath, another the water bath, at a temperature of 40° to 42° cent. (104 to 107 Fahr.). Excessive heat, and the appearance of internal congestion, is treated by local depletion, cold water, and even by ice. With the exception of that of two of the medical officers, one of whom trusts to saline treatment, and another to emetics, the treatment adopted in the Hôtel-Dieu is of the above character, being neither specific, nor remarkably violent, nor purely empiric, but a system of physiological rationalism.

M. Chomel admits the existence of several forms of Cholera, each requiring its appropriate treatment. These are—the *nervous* form, characterised by the predominance of pain, cramps, and disturbance of the intestines; the *algide* form, by diminution of heat, and disturbance of circulation and respiration; the *gastro-intestinal* form, by the abundance of the evacuations; and the *inflammatory* form, bearing some resemblance to acute gastritis and dysentery. In the nervous form, M. Chomel administers opium by the mouth or in injections, or both ways at once if possible; if it cannot be administered in either of these ways, he employs the endermic method. In the algide stage, M. Chomel prefers dry to moist vapour baths; the latter favouring the retention on the surface of the cold clammy sweat which opposes re-action, and with diarrhœa and vomiting, tends to produce colliquation. When the hot air bath cannot be conveniently administered, he uses bags of hot sand, which have the advantage over bottles of hot-water, of being capable of being equally adapted to all parts of the surface. For similar reasons, he prefers friction with aromatic substances, benzoin, frankincense, or juniper berries. He sometimes employs friction with pounded ice, but only in cases where the algide symptoms are recent, and the patient young and of a strong constitution; in patients of weak constitution, he entirely rejects this remedy. The internal remedies which he employs are hot tea punch, alcoholic drinks, etc.; but these do not seem to him suitable when the patient complains of internal heat; in such cases, he prescribes ice, with excitants. In the inflammatory form, with heat of skin, and full, resisting pulse, he employs general or local bleeding, cataplasms to the abdomen, baths, emollient and demulcent draughts, with opium. The antiphlogistic treatment must always be regulated by the

debility of the patient, and the prostration consequent on the attack. If vomiting be abundant and frequent, M. Chomel administers ice in small fragments, or pounded, in small quantities and at short intervals, so that it may be brought into contact with the stomach in a continuous manner. Seltzer water with ice, the anti-emetic draught, sub-nitrate of bismuth, calumba, and opium, are alternately used, to fulfil the same indication. If the vomiting obstinately resist these means, he applies a blister to the epigastric region; more rarely, and only when there are symptoms of gastric inflammation, he employs cupping or leeches. Diarrhœa is treated by moderation in the quantity of drink, opiate or astringent injections, with alum, rhatany, monesia, etc.; and a large blister to the abdomen in obstinate cases. M. Chomel treats cramps by opium, used in frictions and internally. He pays much attention to dyspnœa; if it be accompanied with febrile re-action, he employs general bleeding; but if—which is much more frequent,—there be no fever, he treats it by diffusible stimulants, as ether, and nitrate of ammonia. In cases complicated at the commencement with cerebral symptoms, opium is excluded from the treatment, and revulsives are employed, as blisters on the limbs, and laxatives, if there be no diarrhœa. When debility is the prevailing symptom, the treatment consists chiefly of tonics.

M. Louis. The treatment adopted by this physician does not differ sensibly from that of M. Chomel. Besides those remedies which may be called for by certain symptoms, his method of treatment mainly consists of calefacients, viz., the hot air bath and warm infusion of mint, to restore the heat and excite the circulation; and aromatic stimulants, with injections, containing ten or twelve drops of laudanum, several times daily, to restrain the evacuations and pains. When heat is re-established, Seltzer water is substituted for aromatic draughts.

M. Rostan prefers, at the commencement of the disease, for the purpose of restoring heat, hot water baths, at a temperature of 40 to 42 cent., followed by some hot aromatic infusion, and friction of the limbs with ammonia liniment. If these means are insufficient, a mixture, containing ether, alcohol, and laudanum, is administered. Acidity of the secretions is treated by alkaline remedies, as ammonia or lime-water; vomiting and diarrhœa by opium, administered by mouth, and in enemata, containing each six drops of laudanum. In reaction, moderate bleeding is sometimes employed, but only when there are symptoms of internal congestion. In obstinate vomiting, a large blister is applied to the epigastric region.

M. Husson's treatment, which differs little from the preceding, consists in the use of hot air baths, dry frictions, and the following stimulant mixture: Infusion of limes or of mint, 120 grammes; acetate of ammonia, two to four grammes; wine of Bagnols, sixty grammes; tincture of canella, four grammes. He treats diarrhœa by opiate injections; obstinate vomiting, after reaction, by ice: and administers quinine during convalescence.

M. Martin Solon. The remedies employed in the practice of M. Martin Solon are partly adapted to particular symptoms, and partly intended to act in a special manner on the system and to modify the state of the blood. The treatment of individual symptoms comprises the use of the hot air bath on the admission of the patient, if in the algide stage, and the administration of one of the following mixtures: laudanum of Sydenham, 25 drops; Hoffmann's liquor, 15 drops; infusion of mint, 60 grammes; ammonia, 20 drops; syrup, 30 grammes; or a mixture of distilled mint-water, ammonia, powdered calumba, and trisnitrate of bismuth: these mixtures are alternated with punch. For diarrhœa, he employs opiate and albuminous enemata; and applies, immediately after the hot air bath has been used, sinapisms to the abdomen, chest, and vertebral column, to maintain warmth, or excite it, if the hot air bath have not been sufficient. To fulfil the second indication, he administers carbonate of ammonia, in doses of 30 centigrammes (about 4½ grains), six times a-day. In obstinate vomiting, he uses cupping over

the epigastrium, or a blister, which is afterwards dressed with a centigramme (about 1-6th of a grain) of hydrochlorate of morphia. Diarrhœa is treated by injections, containing trisnitrate of bismuth; and suppression of urine by a ptisan of couch-grass and nitrate of potash. During convalescence, he gives wine of Bagnols with Seltzer water.

M. Guérard distinguishes three principal stages of the disease. At the commencement, when there are diarrhœa and vomiting, without cyanosis or cramps, whether this be only cholerine, or incipient Cholera, he uses narcotics, astringent injections, and rice-water; and, if the prodromata continue in spite of these, opiate electuary and vinous drinks. When Cholera has obviously declared itself, he prescribes the hot-air bath every quarter of an hour; aromatic drinks; ice and Seltzer-water for vomiting; lemonade, with wine, if it can be borne, to be continued also after the vomiting has ceased. To relieve the cramps, and other neuralgic symptoms, he gives ether and chloroform: the latter remedy has appeared to him well calculated to fulfil this indication. When moderate reaction has set in, he confines himself to the expectant treatment; if it be excessive, with symptoms of internal congestion, he employs local and general bleedings, and sinapisms. If diarrhœa persist after reaction, he treats it by nitrate of silver, in mixtures, or in injections, containing about 2½ grains.

M. Honoré employed vapour baths; hot aromatic draughts, with syrup and ether; Seltzer water; dry frictions; enemata of rhatany and laudanum; wine of Bagnols, with laudanum, in spoonfuls; ice: bleeding, Seltzer water, and lemonade, after reaction.

M. Légeb, who has succeeded M. Honoré, adopts the saline treatment, recommended by Dr. Stevens. He gives common salt, in mixture and enemata; the daily dose of each being from 15 to 25 grammes, until the vomiting have ceased. He states that the vomiting is generally increased at first, but soon diminishes, and usually ceases in about twelve hours. The effect on the alvine evacuations is still more rapid; the first injections often restoring their natural bilious character. The only additional remedy which he employs in the early stage, is hot cloths, to restore warmth.

M. Tardieu at first employed sea-water in five cases, in one only of which it appeared to produce permanently beneficial results. The restoration of the bilious character of the evacuations was the most obvious effect of this treatment. He now gives stimulants, preceded by an ipecacuanha emetic, hot air baths, aromatic infusions, Seltzer water, etc. He only uses opium where the cramps and other nervous symptoms are very intense, and is very guarded in its use, from the dread of cerebral complications.

Hôpital de la Charité. The situation and internal arrangements of this hospital are more healthy than those of the Hôtel Dieu, and its inmates are mostly from a better class of the community. The medical treatment also presents more diversity.

M. Fouquier, and M. Oulmont. M. Oulmont was the first to introduce the saline treatment into the Parisian hospitals; and he employs this method in all cases of Cholera, admitting, as an aid, only the external means of restoring warmth. His prescriptions uniformly are: common salt, 15 grammes; gum-mixture, 120 grammes; to be taken every quarter of an hour in spoonfuls; and two or three enemata during the day, containing 15 grammes of salt with a sufficient quantity of water. This treatment has not, as M. Oulmont himself confesses, entirely answered the expectations formed regarding it. M. Fouquier does not seem to have adopted any exclusive mode of treatment, but to have generally given emetics of ipecacuanha, in doses of two grammes, with diffusible stimulants, and opiate injections.

M. Rayer abstains from all experiments, and employs the same treatment as he adopted in 1832. He considers the digestive organs as the chief seat of the

disease, and prescribes, in all cases, either 10 centigrammes of opium in pills, during the day; or a mixture, with from 6 to 12 drops of laudanum, and three or four injections, each containing 12 drops of laudanum; cupping to the epigastric or umbilical regions several days in succession, or even several times in the same day; venesection from the arm, when possible; iced Seltzer-water for common drink. In several cases complicated with delirium, he has opened the temporal artery, but without success.

M. Cruveilhier employs a very active and various treatment. Most commonly, he administers at first hot aromatic infusions with ether; then a combination of astringents and narcotics, with some such mixture as the following: peppermint water, 120 grammes; extract of catechu, 1 gramme; laudanum, 20 drops. For diarrhœa, he employs enemata containing from 15 to 20 drops of laudanum; and if there be local abdominal or thoracic pains, he has recourse to repeated local bleedings, until the pain have ceased. A succession of sinapisms to the limbs, and friction with a stimulating liniment, complete in general his treatment of the algide stage. In some very severe cases, almost *foudroyants*, he administers every half-hour a spoonful of the following mixture: laudanum, 3 grammes; ammonia, 5 grammes; ether, 15 grammes. The treatment in the intervals consists of draughts of hot water, sweetened with gum syrup; sinapisms to surround the limbs; a large sinapism to the abdomen, and a blister to the chest or vertebral column. M. Cruveilhier has tried the *stachys*, but without any sensible result, which may be ascribed to his having combined it with opium and other remedies.

M. Bouillaud generally adopts the saline treatment, and gives daily 15 grammes of salt in mixture, and two enemata, each containing 15 grammes of salt. The only additional means which he uses are ice and Seltzer water, and sinapisms to restore warmth. He rarely uses the hot air bath, and only when algidity is obstinate. More rarely, M. Bouillaud uses opiate enemata, with ice and Seltzer water, sinapisms and stimulating liniments. He is entirely opposed to general or local bleeding, even in the stage of reaction.

M. Briquet. All the efforts of M. Briquet are directed to the promotion of reaction, at the same time that he employs opiates for the evacuations and pains. His treatment at first consisted of the hot air bath, infusion of mint, or punch, frictions with ammonia, and sinapisms to the limbs. He has since adopted a more active method, consisting of the alternate administration of ice and hot aromatic and stimulant drinks, and alternate frictions with pounded ice and with alcoholic and ammoniacal liniments every half hour. The other indications are fulfilled by pills of thebaic extract, mixtures with acetate of morphia, enemata of starch and laudanum (6 to 12 drops), Seltzer water, etc. In some cases he has given emetics of ipecacuanha, in doses of 1 or 2 grammes. The comparative result of his treatment is not known.

M. Pidoux has not confined himself to any one method, but has employed a varied treatment. At first he prescribed, in the algide stage, diffusible stimulants with narcotics, as tea, hot infusions of lime or mint with syrup of ether and of opium, a succession of sinapisms to the limbs, etc.; ice and Seltzer water, when reaction had commenced. More recently, he employed opium in large doses, in mixture and injections; but was soon led to renounce its use, from its appearing to produce severe cerebral disturbance. Saline injections have also been tried and abandoned. M. Pidoux employed electro-galvanism in some cases, with the effect of relieving some of the more distressing nervous symptoms, as cramp, hiccup, vomiting, etc.; but he has not repeated this remedy. He has also tried the terchloride of carbon, but without sensible effect. At present, he is making experiments on the utility of trisnitrate of bismuth in diarrhœa.

Hôpital du Val-de-Grace. This being a military hospital, its inmates consist of men, generally of good constitution, and not weakened by privations or excesses. It must be remembered, however, that the present dwell-

ings of many of the soldiers in Paris do not present the most satisfactory conditions of aëration, dryness, and ventilation. The hospital itself is in a healthy situation, and its internal arrangements seem perfect.

M. Lévy, the chief physician, describes three periods in the progress of Cholera; two of which—those of prodromata and of reaction—are amenable to a rational system of therapeutics, and the third—the organic or asphyxic—is treated as yet empirically, with more or less success.

1. *Prodromata.* This period extends from the first disturbance of general health, to the appearance of cholera stools or spasmodic symptoms. There are three principal forms, each requiring appropriate treatment. *a. Nervous form*, indicated by headache, vertigo, weakness of the lower limbs, transitory epigastric spasms, transitory impediment to respiration, etc. Treatment: Repose, warm infusions, sudorifics; and if these be insufficient, ipecacuanha in emetic doses. *b. Saburral form*, indicated by *malaise*, sense of weight at epigastrium, foul mouth, anorexia, lassitude, lumbar pains, and cephalalgia. The emetic treatment is successful here, even when, besides these symptoms, there are some cramps and stools more or less typical of Cholera. If there be also *gargouillement*, or ventral intumescence, the heat and pulse being normal, M. Lévy employs laxatives, preceded or not by an emetic; by these means, he has arrested the course of some apparently severe cases, in spite of severe symptoms having occurred in addition to those of the premonitory stage. *c. Diarrhœal form*, or *cholerine:* treated by opiates, especially enemata with laudanum three or four times a day; and ipecacuanha when these fail.

2. *Developed Cholera.* This period has two distinguishing characteristics—tendency to cold and loss of pulse: but there are various other symptoms referable to the abdominal, thoracic, or cranio-spinal viscera, one or more of which may be present, giving rise to a variety in type and treatment.

a. Cyanic and algide form, with thready or imperceptible pulse; or adynamic form. This is the form presented in many sudden attacks. There may or may not have been diarrhœa and vomiting, and the patients present rapid cyanosis, with general algidity, or confined to the face, tongue, and limbs: the skin is pasty, and moistened with a cold, clammy sweat; there is extreme prostration, wrinkling of the face, hollowing of the orbits, etc. The patients make little or no complaint, but fall into a kind of coma which ends in death. In these cases, M. Lévy has recourse to the energetic use of calefacients, by directing streams of hot air on different parts of the body, and administering hot infusions, and stimulating mixtures with acetate of ammonia. In the intervals, he gives hot coffee, or wine of canella. The ptisan which he prefers, is sweetened infusion of balm, with 20 or 30 drops of tincture of canella to the quart.

b. Cyanic and algide form, with predominance of gastro-intestinal symptoms (vomiting and diarrhœa). The same external means of restoring heat are employed; but internal stimulants and hot drinks generally increase the vomiting, or at least are soon rejected. The internal remedies are, ice in fragments, effervescing lemonade; and the only stimulant which the patients seem able and willing to bear, is coffee. In almost all, who have been much exhausted by vomiting, there is severe pain in the epigastric region, and general abdominal tenderness; obstinate hiccup also supervenes. In these cases, M. Lévy employs, in addition to ice and lemonade, the repeated application of sinapisms to the epigastrium, cupping and dry-cupping, followed by laudanized poultices; if these means fail, he applies a small ammonia blister to the epigastrium, and dresses it with increasing doses of morphia. It may be remarked, in passing, that the blistered surface rapidly heals, and leaves a brownish scar, with thickening of the skin, due to the sanguineous infiltration of the part. In more obstinate cases, trisnitrate of bismuth, in doses of 1 gramme every hour, up to 10 or 12 grammes, has been found successful; it seems first to increase the intervals of, then to suppress, the

vomiting. Its action is manifest, if at all, when from 4 to 6 grammes have been taken. Diarrhœa and vomiting have been less obstinate in the patients in the Hôpital de Val-de-Grâce than elsewhere. The use of astringents does not seem to M. Lévy to be useful or benefical; but he thinks that these symptoms are to be remedied by treating the general state of the system.

c. Cyanic and algide form, with predominance of nervous and spasmodic symptoms. This is an important form, and most difficult to treat. The patients,—cold, icy, blue, or only of a bistre-tint, pulseless, tortured by cramps, breathless and anxious, from constriction of the thorax, which appears due, as well as the wrinkled countenance and sunken eyes, to muscular retraction, and who are a prey to jactitation, anguish, and severe pains,—form the greatest number of victims. Though ice-cold, they throw off the bedclothes; they complain of insupportable heat; the hot air bath becomes a punishment to them, and increases the oppression and anxiety. M. Lévy substitutes for this, jars of hot water, long continued frictions, which at the same time relieve the cramps, hand-sinapisms, moved up and down the limbs, and the internal use of hot drinks. This is, without exception, the most severe form of the disease, and that in which several new remedies have been unsuccessfully employed; viz.: electricity (by Dujardin's apparatus), ipecacuanha, in doses of from 2 to 4 grammes, hachisch, extract of nux vomica, and strychnine. M. Lévy employs here the same treatment as he did at the commencement of the epidemic, with the exception of the hot-air bath. Externally, he employs frictions of laudanum with turpentine, camphorated oil with laudanum, *baume tranquille* with chloroform, etc. For internal use, he depends more on ether and laudanum, than on acetate of ammonia.

3. *Reaction.* Clinical observations and post-mortem examinations have furnished M. Lévy with the key to the treatment of this stage. The forms and complications of reaction are in close relation with the anatomical conditions of the asphyxic stage; and the attentive study of the peculiarities presented by the latter will almost enable one to foretell and calculate on the local tendencies of the former. The cyanic or algide stage tends to produce congestions, sanguineous extravasations, ecchymoses, etc.; and when reaction takes place, the organs, which are the seat of these lesions, become subject to hypersthenia, excitement, or phlogosis; inflammation even often becomes one of the conditions of recovery. When the organs have been uniformly and moderately congested, and the reaction is gradual and continuous, there is a slight elevation of pulse, with general perspiration, and turbid or increased urine; here the expectant treatment is sufficient. Sometimes the reaction is more violent, but still general; and a kind of inflammatory fever arises, which only requires hygienic treatment and careful watching. But in a great number of cases, congestive symptoms have been confined to the brain, the lungs, or the intestinal canal. Under the first head, are classed secondary encephalic congestions, obstinate headaches, with or without fever, torpidity, most frequently accompanied by vomiting, as in hydrocephalus after cerebro-spinal meningitis; the state of drowsiness and coma which succeeds this; delirium, sometimes furious, sometimes muttering, with intervals of slumber; being in proportion to the degree of injection of the meninges, and of sub-arachnoidean and ventricular effusion. According to the degree of compression of the brain by the distension of the vessels of the periphery, and to the degree of febrile excitement, there are observed the symptoms of meningitis, of typhoid fever, of meningo-cephalitis; and the most frequent is the torpid state, with vomiting and constipation. According to the nature of the case, M. Lévy adopts the semirecumbent posture, depletion at the base of the skull, derivatives to the digestive canal (Seidlitz water, sulphate of soda, laxative enemata), and revulsives (sinapisms and blisters) to the extremities, and sometimes a blister to the nape of the neck; and in a number of cases, his treatment has been successful. Several cases of reactional pneumonia have been cured by bleeding to about 8 oz., opiate emetics, and blis-

ters. The various abdominal inflammatory complications yield readily to cupping, laudanized poultices, and hygienic means. Severe and persistent pain in the epigastric region, has been relieved by the application of ten or twelve leeches. Constipation is, more frequently than diarrhœa, accompanied with ventral irritation, and must be treated by enemata and regiminal means. Diarrhœa is the ordinary symptom of relapse, and should be carefully sought for, especially as its existence is often concealed by the patients.

Hôpital de la Pitié. The situation and internal arrangements of this hospital are healthy: but its patients are mostly of the lowest class, from a population decimated by misery, badly lodged and clothed, and ruined by every kind of excess. The modes of treatment, though not completely opposed, present great differences.

M. Serres considers Cholera as a pernicious typhoid affection. The object of his treatment is to resolve the disease into its two principal elements, to master at first the pernicious phenomena, so as only to have subsequently to treat the typhoid fever, deprived of the complication to which it owes its severity. One series of remedies is directed against the vomiting, the alvine evacuations, and the pernicious symptoms of the first period of the disease; another against the characteristic changes of the second, or typhoid period. The first indication is fulfilled by the anti-emetic potion of Rivière, Seltzer water, and citric lemonade, and starch enemata three or four times a day, containing camphor, 3 grains; sulphate of quinine, 3 grains; and laudanum, 8 drops. The specific treatment consists of daily mercurial inunctions to the abdomen, sometimes repeated several times a day, to the amount of 8 or 10 grammes of mercurial ointment; and of the administration of the following pills: Æthiop's mineral, 1 gramme; powder of tragacanth, half a gramme; to be made into four pills with syrup, and taken during the day. In addition, he uses the ordinary means of restoring heat. Opium he employs with moderation, and only in enemata, except in some very rare cases, with painful cramps, where he gives a small dose of opium, with black sulphuret of mercury. He also rarely gives ether in mixtures. The comatose phenomena of reaction are treated with sinapisms, and sometimes, when very intense, by leeches behind the ears, and laxatives.

M. Piorry. According to M. Piorry, the cause of Cholera is a poison *sui generis*, the effects of which are varied by the influence of septic agents. The intrinsic cause of Cholera cannot be remedied, but we may greatly modify the conditions of septicity which give the disease its most severe character. His treatment of the intrinsic cause is mainly prophylactic, by withdrawing healthy individuals from the epidemic influence, or removing those who labour under the premonitory symptoms from their confined and ill-ventilated habitations. The disease, once developed, exercises its influence at first on the blood, then on the digestive canal. The action on the blood he treats by demulcent drinks, exposure to pure air, and copious water lavements. The gastro-intestinal symptoms are treated by large quantities of infusions, especially tea, as long as vomiting continues, and by albuminous drinks (whites of eggs beaten up in water), to remedy the incessant loss of albumen. M. Piorry does not employ evacuants, even though they seem indicated; as he thinks them calculated to increase the debility of the patient to a dangerous extent. If the gastro-intestinal evacuations be obstinate, he applies bladders of ice to the whole of the abdomen, and hot cloths at the same time to the chest, and accompanies these with enemata of iced water. In the algide stage, he uses the vapour bath, tea, with alcoholic spirit, and copious injections of water. The indication here, according to M. Piorry, in this stage, as well as in the preceding, is to throw as much water as possible into the blood. For the phenomena of reaction, he has no fixed treatment; but

varies it according to the pathological conditions of the organs, as they manifest themselves.

M. Gendrin considers that the disease consists of five principal orders of phenomena, which are successively developed; viz.: the premonitory symptoms, which, according to him, are constant; the symptoms of excessive secretion, at the commencement of confirmed Cholera; the inspissation of the blood by the loss of its liquid constituents; the suppression of all the secretions; and, finally, febrile reaction in various forms. The indications founded on these five orders rest: 1, In the character of the precursory symptoms; which are most commonly diarrhœal, much more rarely nervous or vertiginous; 2, In the state of gastro-intestinal excessive secretion, which must be arrested; 3, In the changes which this secretion produces in the blood, which must be modified so as to maintain or re-establish a healthy circulation; 4, In the febrile complications of reaction, which must be moderated; 5, In the consecutive congestive phenomena, which are to be prevented. In the diarrhœal form of the precursory symptoms, M. Gendrin prescribes emeto-cathartics, as ipecacuanha, followed by a saline purgative, with the object of modifying the excessive intestinal secretion. If the precursory symptoms consist in vertigo, headache, general *courbature*,[1] without diarrhœa or vomiting, he prescribes a bleeding, abstinence from food, or a very moderate diet, demulcents, and a small dose of opium. In both cases, he orders rest in bed, to favour the action of the skin, and to keep the body comfortably warm. In confirmed Cholera, the first indication is, to moderate the state of secretory turgescence of the muciparous crypts of the intestinal mucous membrane; to fulfil this, he employs bleedings at the commencement. If the disease have some intensity, he prescribes, in addition, opium in large doses, in solution or in tincture. If the evacuations have been sufficiently copious to produce symptoms of cyanosis, he has recourse to stimulating liniments, with the object of restoring the circulation, and of rousing the sensibility and the exhalant function of the cutaneous surface. If, in spite of these means, the algide stage sets in, M. Gendrin employs vapour or hot-air baths only where the skin appears capable of reacting and perspiring. In the pronounced algide period, he continues the opiates, if the alvine secretions be still abundant; but considers that it is of most consequence to use tonic or simple stimulants, but not alcohol. In this period, he also depends greatly on external stimulants, as frictions, sinapisms, and blisters. With the object of giving play to the circulation, he prescribes bleeding; but as the veins allow only a small quantity of blood to escape, he leaves the vein open, and employs friction in the direction of the returning current of blood, until he has obtained some spoonfuls of blood. In the stage of reaction, the treatment of M. Gendrin differs, according as it is more or less complete and energetic. If it be incomplete, and the patient be much debilitated, and if the secretions, especially that of urine, be not re-established, he continues the use of internal and external stimulants, with the addition of sinapisms; if, on the contrary, reaction be energetic, and coma be threatened, a small bleeding is practised; if it be well established and moderate, he confines himself to the expectant treatment. The obstinate vomiting, extreme thirst, and hiccup, so frequent in this period, are treated by ice.

MM. Clément and Piedagnel generally employ the *symptomatic* method of treatment, with some modifications at the stages of commencement and reaction. At the commencement of the disease, M. Clément employs, in addition to astringents and opiates, leeching to the fundament. In the algide period, he uses stimulants with caution, for fear of exciting a too energetic reaction. In the precursory diarrhœa or cholerine, M. Clément would give

[1] There is no English substantive by which the French word "*courbature*" can be adequately translated. "*Je me sens tout courbatu*" means, "I feel sore all over."

ipecacuanha, but has not yet had an opportunity. The method of M. Piedaguel resembles that of M. Clément, except that he prefers a small bleeding to leeches to the anus. The characteristic feature of his treatment is, the employment of copious bleedings as soon as reaction sets in, so as to combat or prevent symptoms of cerebral congestion.

Hôpital Saint-Louis. This hospital is situated in a populous quarter, and its structure is generally salubrious; but the patients are generally in a bad hygienic condition, hence the cases of Cholera are numerous and severe.

M. Gibert employs, almost exclusively, the rational or natural method, which consists in fulfilling such indications as present themselves, and in following the course which nature points out in effecting a spontaneous cure. During the precursory period of diarrhœa, he employs rest, dietetic treatment, demulcent drinks, and opiate enemata. In the algide period, he uses hot aromatic drinks at first, followed by gum water with Seltzer water and ice, poultices with laudanum, narcotic enemata; and, at the same time, sinapisms, hot cloths, and frictions with laudanum over the regions troubled with cramp, so as to excite the circulation in the periphery, and to arrest the evacuations. In the stage of reaction, he applies cupping glasses to the chest and epigastrium, if there be ever so little dyspnœa, or tendency to asphyxia or coma. He does not employ bleeding, emetics, purgatives, nor specifics of any kind; and even abstains from the use of hot air or vapour baths, which seem to him as much contraindicated as in asphyxia from drowning. Cases of cholerine are treated in the same way, and, according to M. Gibert, with uniform success.

M. Devergie. The treatment adopted by M. Devergie does not entirely consist, as some imagine, in the use of truffles. He appears to treat each symptom by its appropriate remedies; cold, for instance, by the hot air bath and internal stimulants; vomiting, by ice and Seltzer water; alvine evacuations, by opiate enemata. In some cases he has tried blistering of the epigastrium by means of the long continued application of tar ointment.

A short time after the first appearance of Cholera in Paris, M. Devergie, observing that persons who eat truffles are generally constipated, conceived the idea of employing them in the diarrhœa of Cholera. He employed at first a simple decoction, made by boiling 125 grammes (about 4½ ounces) of truffles, cut in small slices, with 5 quarts of water. This forms a ptisan which, when strained, is colourless and slightly opaline; it has no disagreeable odour; and when sweetened, has an agreeable taste to the patients. More recently, he has formed a distilled water from them, which is charged with the odour of the truffles. By pounding the truffles in a mortar, and treating them with alcohol, he has formed an homogeneous mass, from which he proposed to form pills, by mixing a little sugar with the mass, and afterwards enveloping them in a layer of gelatine. Both in cholerine and in actual Cholera, M. Devergie employed truffles as a remedy for vomiting and diarrhœa; and says that some cases seem to have suddenly recovered, on the cessation of the diarrhœa and vomiting. He has, however, completely abandoned this remedy, which failed to answer his expectations.

M. Moissenet employs the saline treatment, by chloride of sodium, to which we have already referred, as employed at the Hôtel-Dieu and La Charité. In addition, he gives a ptisan of bicarbonate of soda, 2 grammes to the pint.

Hôpital Beaujon. This hospital is one of the most salubrious, but its inmates are mostly from the villages about Paris, so that the hygienic conditions of the hospital are frequently counterbalanced by misery and insufficient food.

M. Bouvier's mode of treatment is as follows. 1. To moderate the eva-

cuations by means proportioned to their intensity, and to the exhaustion which they produce; thus, by mouth, syrup of quinces in rice-water, at the commencement; by the rectum, enemata of decoction of marshmallows, poppies, or of starch, with some drops of laudanum. Against vomiting, he uses Seltzer water, the potion of Rivière, opium in small repeated doses, ice, sinapisms to the epigastrium, and a small quantity of such drink as may be agreeable to the patient. Slices of orange or citron are applied to the lips and tongue to allay thirst, if all drinks, and even ice, be rejected. Cold water is given in small quantities, if the patients prefer it. 2. To sustain the power of the system and produce derivation from the intestines to the skin, he employs light tonic drinks, stimulants, external revulsives, cutaneous irritants; infusion of tea with some spoonfuls of rum, coffee, wine of Bagnols with water, punch; sinapisms, external heat, frictions with liniment of ammonia and cantharides. Stimulants, if too powerful, exhaust the rest of the system by producing too much cerebral irritation; and should be employed with caution. 3. To prevent and combat cerebral congestion in the stage of reaction, M. Bouvier prefers cutaneous revulsives, sinapisms, blisters to the nape of the neck and thighs, with support of the powers, to bleedings. He also adds antispasmodics, and opium if there be delirium or cerebral excitement; and leeches sometimes, but only when specially indicated.

M. Legroux. The treatment of Cholera pursued by M. Legroux, is the following. 1. To restore warmth, and reanimate the patient, he employs hot cloths, in preference to bottles of hot water, which appear to him more hurtful than useful. At the same time, he gives hot drinks of tea with a little rum, etc.; often also with a little syrup of ipecacuanha. These means generally produce prompt reaction. 2. When reaction is established, he gives cold iced drinks, which the patients take with eagerness. 3. At the same time, he gives a mixture with a small proportion of opium, to be taken by spoonfuls, and followed immediately by pills of tannin, to calm the nervous symptoms and diminish the intestinal excretions; also enemata containing laudanum and tannin, several times in the day. 4. When the patient has a certain amount of strength of pulse, he often practises bleeding at the commencement, which he does not hesitate to repeat if there be febrile reaction, especially when there is coma. The blood which flows is generally glutinous; local bleedings by cupping or leeches are often employed by him in cerebral complications, as well as blisters to the lower limbs. 5. In some cases, where the dull intestinal sound indicates their being filled with the Cholera matters, he has employed, with advantage, castor oil, alone, or with calomel. 6. Having observed in some cases a sort of alternate remission and exacerbation, he adds sulphate of quinine to the opiate enemata. 7. In cases of obstinate vomiting, he applies a blister to the pit of the stomach. 8. Obstinate diarrhœa is treated by enemata containing a solution of nitrate of silver. 8. As to most of the remedies whose success has been declared wonderful, he has almost abandoned them, convinced that the modifications introduced into the system by Cholera can by no means be cured by a single specific.

Hôpital de Gnos-Caillou. The general conditions of this hospital much resemble those of the hôpital de Val-de-Grâce.

M. Durand, at the commencement of the epidemic, employed hot air baths, stimulating aromatic infusions with acetate of ammonia, sulphuric ether, and laudanum, stimulating frictions, sinapisms, etc. When reaction had commenced, ipecacuanha in fractional doses, with opium; and when it was established, purgatives by mouth and in enemata, and sanguineous depletion when the congestive symptoms were very intense. But, having perceived that the most severe cases were those unattended with vomiting, and that the administration of stimulants tended to put off the excitement of

vomiting, by reason of the increasing inertia of the stomach; and also having observed that laxatives given too soon after the algide stage, as well as the cold drinks to promote their action, tended to maintain the algide state, he has modified his treatment, so far as it relates to this stage. The patient, on admission, is clothed in a shirt of swanskin (*molleton*), and woollen stockings; and has administered to him the hot air bath, and 2 grammes of ipecacuanha in two doses. After this, to favour vomiting and promote diaphoresis, M. Durand gives a mixture of infusion of ipecacuanha with tea and spirits, to be taken very warm. Diaphoresis is generally soon established. He does not fear to return to the use of ipecacuanha, if the patient still complain of a sense of fulness in the stomach. He considers it advantageous to provoke vomiting, whenever there is nausea. If reaction do not come on after the use of emetics, he prescribes 15 grammes at a dose of the following mixture: root of gentian, of elecampane, of angelica, of acorns, each 45 grammes; Hollands gin, 1 quart: macerate for three days. He also gives a tablespoonful of the following every quarter of an hour: distilled mint water, 100 grammes; sulphuric ether, 4 grammes; acetate of ammonia, 4 grammes; and, if there be cramps and agitation, laudanum, 1 gramme. This is alternated with very hot tea, to which spirits are added. For ptisan, he gives infusion of orange with acetate of ammonia. When moderate reaction is established, he withdraws the heating drinks, and gives hot tea without alcohol. When it is excessive, he gives purgatives of Seidlitz water, or manna with sulphate of magnesia, followed by large quantities of sweetened barley water, or sulphate of magnesia in cold tea. For some time, he has employed lemonade or citrate of magnesia, in place of Seidlitz water. At the same time he gives daily three enemata with senna and sulphate of soda. He repeats these purgative remedies if coma sets in, and at the same time applies lotions, containing water, camphorated spirit, and salt, to the head. He also applies leeches to the temples, and gives salt in barley water; and, under its influence, the tongue, though clammy or dry, has become freely moist. The obstinate continuance of vomiting is treated by Seltzer water, sometimes combined with alum. Obstinate diarrhœa has been arrested in some cases, by the administration of enemata containing acetate of lead. Where comatose symptoms have been manifested in paroxysms, M. Durand prescribes sulphate of quinine in mixture or in enema.

M. Worms. In the algide stage, although the means used by M. Worms are very numerous and varied, their general character is that of being powerfully stimulant. He gives a mixture consisting of sulphuric ether, 15 grammes; liquid ammonia, 3 grammes; tincture of capsicum, 1 gramme; treacle, 15 grammes; camphor, 2 decigrammes; infusion of mint, 120 grammes. He also applies fomentations to the limbs of a solution of 1½ gramme of camphor in 120 grammes of rectified spirit and 300 grammes of acetic acid: and a plaster to the epigastrium, consisting of treacle, 15 grammes; balsam of Peru, 15 grammes; and essential oil of mint, 8 grammes; to be laid upon a hot brick. He gives also infusion of limes and of mint as a drink; hot applications to the feet, etc. This treatment is generally preceded by the administration of an emetic of 2 grammes of ipecacuanha. When reaction is at hand, in order to prevent cerebral complications, M. Worms applies to the head, by means of flannel, the following lotion: camphorated spirit, 150 grammes; liquid ammonia, 25 grammes; hydrochlorate of ammonia, 45 grammes; dissolved in infusion of arnica, 150 grammes. When reaction is established, he substitutes for the internal stimulants a mixture containing spirits of balm, and camphor; and, at a later period, a mixture of nitrate of potash, 4 grammes, camphor, 2 decigrammes, in 120 grammes of any proper vehicle; or rather, a mixture containing carbonate of ammonia and camphor. He uses laxative enemata, in proportion to the intensity of the congestive phenomena.

The following table shews the comparative mortality at the seven hospitals, of which we have described the treatment, up to the 5th of May:

	No. of Cases up to May 5.	Deaths.	Recoveries.	Under treatment.	Mortality per cent.	Recoveries per cent.	Ratio of recoveries to deaths.
Hôtel-Dieu	415	210	118	87	0·50	0·29	0·58
Hôpital de la Charité..	274	154	57	63	0·56	0·21	0·37
——— de Val de-Grace	227	57	98	72	0·25	0·43	1·72
——— de la Pitié....	272	137	87	64	0·50	0·32	0·64
——— Saint-Louis ..	237	113	46	78	0·47	0·19	0·40
——— Beaujon ...	133	83	19	31	0·62	0·14	0·22
——— Gros-Caillou..	270	90	87	93	0·33	0·32	0·97

TOTAL SUPPRESSION OF URINE DURING SEVEN DAYS: MILDNESS OF THE TOXÆMIC SYMPTOMS: RECOVERY.

Dr. W. S. Oke, physician to the Royal South Hants Infirmary, details a very remarkable case of this description in the *Provincial Medical and Surgical Journal*, for 16th May 1849. We do not agree with Dr. Oke in thinking that "the removal of the suppression cannot fairly be attributed to any of the means employed." The use of stimulating diuretics was likely to prove *injurious;* but the embrocation and the cupping *must have relieved the renal congestion*, which was very probably augmented or kept up by the medicines administered. Cautious purging, fomentations and cupping over the loins, would, in our opinion, have comprised the orthodox treatment. The small amount of cerebral oppression is remarkable. The following is an abridgement of Dr. Oke's paper:

Dr. Watson states (Lecture 77), that "this affection usually occurs in persons who are advanced in life, and inclined to corpulency." He says:—"Sir Henry Halford has related one of five instances of this disease that he had met with in the course of twenty-seven years; he says it was an exact copy of all the others that had fallen under his notice. As his account of the general course of the symptoms coincides with the statements of other writers, I may give you his narrative in lieu of a formal description."

"A very corpulent robust farmer, of about fifty-five years of age, was seized with a rigor, which induced him to send for his apothecary. He had not made water, it appeared, for twenty-four hours; but there was no pain, no sense of weight in the loins, no distension in any part of the abdomen, and therefore no alarm was taken till the following morning, when it was thought proper to ascertain whether there was any water in the bladder, by the introduction of a catheter, and none was found. I was then called, (says Sir Henry), and another inquiry was made some few hours afterwards, by one of the most experienced surgeons in London, whether the bladder contained any urine or not, when it appeared clear that there was none. The patient sat up in bed, and conversed as usual, complaining of some nausea, but of nothing material in his own view, and I remember that his friends expressed their surprise that so much importance should be attached to so little apparent illness. The patient's pulse was somewhat slower than usual; and sometimes he was heavy and oppressed. I venture to state (continues the author), that if we should not succeed to make the kidneys act, the patient would soon become comatose, and would probably die the following night, for this was the course of the malady in every other instance I had seen. It happened so; he died in thirty hours after this, in a state of stupefaction."

Dr. Oke quotes this case in detail, representing as it does the five fatal instances met with by the late Sir Henry Halford, that the case about to be related may be compared with it. It shows that the constitution may tolerate excrementitious poison in the circulation for a much longer time.

A gentleman, seventy-five years of age, of short stature and spare habit of body, had suffered severely at times from disordered function of the urinary organs, but for many years past had enjoyed an exemption from his complaint by abstemious diet, and taking alkalines. Supposing that he had completely got rid of it, he ventured to return to his former habit of incautious living. He became again subject to the same symptoms, and in one of these attacks, at the latter end of October last, he was attended by Mr. John Rushworth Keele. Total suppression of urine had taken place, and Dr. Oke was requested by Mr. Keele to meet him in consultation on the 31st of October. The attack was preceded by rigors, followed by symptoms of renal obstruction. The warm bath, with other suitable means, had been tried; and the catheter had been introduced, but no urine was found.

When Dr. Oke and Mr. Keele saw the patient in consultation, the following facts were noticed:—No urine had passed since the 30th; there was no distension of the pubic region; and upon another cautious and facile introduction of the catheter by Mr. Keele, the bladder was found quite empty; there was no pain nor uneasiness of the loins, along the ureters, or in the course of the spermatic nerves; neither was there any contraction of the cremaster muscles; but there was a more frequent desire to make water than is natural, and he required the vessel to be handed instantly, "lest (according to his words,) the urine should flow over the bed." Each effort was exceedingly straining and painful, as in dysuria, and caused him to cry out loudly; but the only result of his efforts was a few drops of bright blood. The system was but little disturbed; the tongue moist, and not much furred: the pulse about 90 in the minute, and regular; the skin cool; and what was very remarkable, although he had been a person of a very irritable temper, he had now become subdued, placid, and composed. Supposing from the patient's advanced age, that the suppression may be caused by atonicity or degeneration of the structure of the kidneys, we decided on first trying the effect of stimulant diuretics. ℞. Olei terebinthinæ purificati, guttas xv.; Tinctr. hyoscyami, m. xxv.; aquæ cinnamomi, oz. j. misturæ acaciæ, q. s., bene miscend. Capiat hanc dosim quartâ quâque horâ. Infricetur subinde lumborum regioni linimentum terebinthinæ. At an evening visit, finding that there had been no action of the kidneys, the following was ordered, with a repetition of the warm bath. ℞. Pulveris ipecacuanhæ compositi, gr. iv.; nitratis potassæ, gr. x.; misturæ acaciæ, syrupi simplicis, singulorum dr. j. misturæ camphoræ, oz. j. Misce pro haustu quartis horis sumendo. Capiat cras mane olei ricini oz. ss.

November 1st. He has passed a tranquil night, with snatches of sleep; the bowels have been moderately acted upon; the same strainings of the bladder continue; but there has been no secretion of urine. He has been sick and has vomited. Sumat haustum sequentem inter effervescentiam, quartâ quâque horâ cum granis quindecim acidi citrici in aquæ pauxillo solutis. ℞. Sodæ sesqui-carbonatis, scr. j.; liquoris opii sedativi min. spiritûs ætheris nitrici, m. xx.; syrupi simplicis, dr. j.; aquæ destillatæ, oz. j. misce. In the evening he was much the same in every respect; no urine has passed. Repetatur balneum tepidum et pergat in usu eorundem medicamentorum. Repetatur olei ricini, oz. ss., primo mane.

November 2nd. The vomiting continues, and there is the same ineffectual straining to make water, voiding only a few drops of blood. Between these distressing efforts he lies down in his bed calm and composed. The tongue is somewhat furred, and the pulse between 80 and 90 in the minute. The bowels have not responded to the castor oil. Applicentur cucurbitulæ cruentæ regioni lumbali, et injiciatur per anum enema purgans. He was also directed to take a dose of some aperient pills, to which he had been accustomed, if the bowels should require them.

November 3rd. The strangury, suppression, vomiting and constipation, continue as yesterday. He remains composed in the intervals of endea-

vouring to pass water, but there is no tendency to coma. Repetantur balneum tepidum, enema purgans, et pilulæ aperientes.

4th. The symptoms continue with but little variation; the stomach resists everything, and he is evidently weaker; not a drop of urine has been passed. The catheter is once more easily and cautiously introduced for the satisfaction of his relations; but no urine whatever was found in the bladder, and no blood followed its withdrawal.

During the 5th and 6th, he went from bad to worse. The matter evacuated by the stomach became dark and fœtid; an urinous smell was perceptible in the breath; the pulse fell; the temperature of the extremities was diminished; and his mind wandered. On the evening of the 6th, there was no improvement in any respect; and he appeared fast approaching the moribund state.

On the morning of the 7th, Dr. Oke called, as he supposed, for the last time, but I found that during the night he had passed an ordinary chamber-vessel nearly full of urine, somewhat tinged with blood; and instead of the subdued and placid manner exhibited during the whole time of the suppression, his natural irritability of temper had returned. Upon congratulating him upon so great a change, he exclaimed,—"Better, Sir, better! how can that be possible, when it must be evident that I am sinking into the grave every moment!" In this, however, he was mistaken, as the kidneys continued to act, the vomiting subsided, the bowels resumed their functions. He still occasionally suffers from dysuria; but there has been no return of the ischuria renalis.

Dr. Oke says, "I shall not go into the question of the proximate cause of the renal obstruction, as such an inquiry would be merely hypothetical and inconclusive; neither shall I allude to the treatment as having been successful, as the removal of the suppression cannot fairly be attributed to any of the means employed."

OCULAR APOPLEXY.

In the *Journal de Médecine et de Chirurgie Pratiques*, for January 1849, a case is recorded as having occurred in the practice of M. MALGAIGNE, at the Hôpital St. Louis, in Paris, in which the patient (a little sweep, under treatment for fracture of the radius), was seized with dazzling and loss of sight. M. Malgaigne attributed this sudden blindness to apoplexy of the ocular nervous system, and prescribed fifteen grammes (about four drachms) of a compound tincture of jalap, and mustard pediluvia. In three days, sight was restored.

These nervous apoplexies of the eye differ from sanguineous apoplexies, in the absence of any obvious alteration in the appearance of the diseased organ; the dilated pupil alone revealing the injury. In sanguineous apoplexy, on the other hand, the globe of the eye presents the appearance of an effusion of blood, or of a scorbutic ecchymosis. M. Malgaigne has met with two or three cases at the Bicêtre, in which old persons in good health, and without any headache, were struck with blindness during the night, so that, in rising on the morning, they were, to their great surprise, incapable of distinguishing anything. In these cases, where the eye was red and somewhat painful, the blindness continued. This result is worthy of notice, for the functions of the eye are sometimes regained in apparently much more unfavourable conditions. As an instance of this, M. Malgaigne has seen an old man, one of whose eyes had been crushed without laceration of the cornea. The organ seemed entirely destroyed; so much so, that the patient brought an action against the person who had injured him, and gained a verdict with damages. However, at the end of a year, light began to appear, and the patient finally recovered his sight. An interesting case, bearing on this point, will be found recorded at page 586 of this JOURNAL.

TREATMENT OF EPILEPSY BY COTYLEDON UMBILICUS.

Of late it has become the fashion to prescribe various preparations of the COTYLEDON UMBILICUS as a remedy in EPILEPSY, and the fact of its possessing a certain amount of control over the disease has been fully established. It does not, however, appear to have greater virtues than oxide of silver, ammoniuret of copper, indigo, and other medicines; all of which, within certain limits, have undoubted efficacy. When the therapeutic value of the plant has been more fully elucidated, we intend to return to the subject. In the mean time, it may interest our readers to be referred to a short paper by Dr. BULLAR, in the *Med. Gazette* for 18th May, 1849 (p. 858), where he states, that Mr. Randall, chemist, Southampton, prepares an extract which may be used in five-grain doses twice or thrice daily. Various preparations of the plant may be had from Mr. Hooper, and other London pharmaceutists; as is stated by Mr. SALTER, in the *Medical Gazette* for May 11th.)

THERAPEUTIC ACTION OF ACONITUM NAPELLUS.

The following is an abridgment of papers, by M. Tessier, on this subject, in the *Gazette Médicale de Lyon*, for 15th and 31st January 1849:

ACONITE has three modes of action, viz.: a *narcotic*, an *antiphlogistic*, and a *special action on the skin*.

1. NARCOTIC ACTION. Some deny that Aconite acts in this way; but, nevertheless, the fact is incontestable. It is sufficient to place some drops of the tincture on the tongue, to be satisfied of the narcotic action on the nervous system; for it excites a very decided feeling of numbness in that organ. Besides, when a full dose is administered, it is no uncommon thing to observe delusions, vertigo, collapse, and delirium,—in fact, such effects are known to follow opium and poisons from the family *Solaneæ*. In painful diseases, too, it often gives a wonderful immunity from pain. I have administered Aconite in a great number of painful diseases—in dull pains in the bones, in facial neuralgia, in toothache, sciatica, cancer, etc.; and have observed effects, which from their diversity well merit attention. While morphia, with a few very rare exceptions, calms every species of pain, Aconite only relieves a certain special class. Thus I have never been able, by means of it, to assuage the pain of exostosis, cancer, myelitis, nephritis, gastralgia, or whitlow; but, on the other hand, I have obtained the best results from its use in such painful affections as have a catarrhal or rheumatismal cause, along with disordered function of the skin, such as rheumatism, angina, toothache, etc. Aconite is, then, in a certain class of cases, a narcotic agent *(agent stupéfiant)*, but this action is subordinate to another, afterwards to be spoken of.

2. ANTIPHLOGISTIC ACTION. The reality of this mode of operation is believed in by Dr. Fleming; Dr. Giacomini, who places Aconite among the hyposthenic arterial remedies; and the homœopaths, who affirm that this medicine may be used as a substitute for bleeding in the most urgent cases. To solve the question, as to the existence of antiphlogistic properties, it will not do, (like Dr. Fleming,) to choose cases of rheumatism, bronchitis, pneumonia, erysipelas, or neuralgia, all of which can usually be cured without the abstraction of blood: but we must take diseases in which bleedings are regarded as indispensable, as inflammation of the brain, apoplexy, peritonitis, hypertrophy of the heart, inflammatory fever, and ophthalmia from the introduction of a foreign body into the eye. In my experiments with Aconite on the latter class of cases, I have not met with a single instance in which the Aconite could usefully be preferred to bleeding. I have also given it in active hæmorrhages, in hæmoptysis, and in menorrhagia—and without any advantage. From my observations, Aconite does not appear to be more suitable to the plethoric: and upon the whole, I am inclined to think that it answers

best with persons of a nervous or lymphatic temperament, and especially with those predisposed to rheumatismal and catarrhal affections. I do not, however, maintain that Aconite *never* acts as an antiphlogistic: for by and by I am going to mention cases in which it has sensibly reduced the pulse; but then I will show, at the same time, that the action on the circulation was *indirect*, and that it is by regulating another function that aconite diminishes fever.

3. Action on the Skin. If the principal therapeutic action of Aconite be neither narcotic and calmative, nor antiphlogistic, what is it? My reply is, that *the special action of Aconite is on the skin.* It possesses the property of eliminating from the vessels of the skin the hurtful matter, and of re-establishing the cutaneous functions when deranged by checked transpiration or by some virus. I think that it has the special power of controlling diseases arising from cold, and others in which a morbid principle is retained in the cutaneous tissues, as occurs in the exanthematous fevers. It is a suitable medicine in all those diseases in which the function of the skin is disordered, as in articular and muscular rheumatism, as well as in rheumatism of the nerves, including sciatica and odontalgia; also in affections of the mucous membranes, such as bronchitis, etc.; likewise in the exanthemata.

Diseases in which Aconite is used. Courbature.[1] A bruised feeling in the limbs, creeping sensations on the surface, lassitude, headache, and general discomfort, constitute the group of symptoms called by this name: and they are also symptoms which specially indicate the use of Aconite. The desired relief will generally follow, by taking daily from five to ten drops of the alcoholic tincture in a little water or bland vegetable infusion.

Catarrhal Fever, as Hufeland showed, is caused by the suspension of the active functions of the skin. Its physical characters are—alternations of heat and cold, dragging pains in the limbs, increased frequency in the desire to make water, a tendency to sweat, general fever complicated with a local affection, which is generally coryza, angina, or bronchitis. The therapeutic indications are, 1st, To re-establish the functions of the skin; 2nd, To subdue the irritation of the nose, throat, and bronchial tubes. Aconite fulfils all these intentions. In catarrhal fever, as in *courbature*, it causes the pain in the limbs, the shiverings, and the heats, to subside, and, at the same time, greatly simplifies the progress of the affection of the mucous membrane. But Aconite does not, unaided, fulfil the second intention, which requires the assistance of opiates, blisters, or such other means as may be suitable.

Angina and Acute Bronchitis. Like MM. Tessier of Paris, and Gabalda, the author has seen Aconite of much service in these affections, by diminishing, in the former, the pains of deglutition, and in the latter, rendering the fits of coughing much less distressing.

Rheumatism. To have a correct appreciation of the action of Aconite in rheumatism, it is necessary to discriminate between the different forms of rheumatism, for it is very far from possessing the same influence over all of them. The cases in which it succeeds best are—recent rheumatic pains, unaccompanied by swelling and fever, or in which these symptoms are slight. In them, it possesses very great efficacy, and is preferable to bleeding; also to inoculation with morphia, or the use of belladonna; which drugs are mere palliatives of pain. In acute articular rheumatism, accompanied by decided swelling of the joints and ardent fever, Aconite is of less value. At the onset, however, of such attacks, it may be administered with advantage for the purpose of diminishing the afflux of blood [*la fluxion*] to the joints; but when the synovial membrane and the fibrous and ligamentous structures of the joints become inflamed, Aconite is useless, and in my opinion the best treatment is by large doses of nitrate of potash. In chronic apyrexial rheumatism, the results are good, though not so striking as in recent attacks. By persevering in the use of Aconite for six weeks or two months, obstinate

[1] *Vide* note, p. 570.

rheumatic pains, which have existed for years, may be subdued. Aconite, besides being remedial, possesses preventive properties, by its decided influence over the rheumatic diathesis. When given with this view, it must be continued for months. In all rheumatic affections, but especially those which are chronic, the doses must be much larger than those which are suitable in the diseases formerly spoken of. It is necessary to begin with 10 or 20 drops of the alcoholic tincture, and to increase the quantity up to 4, 6, or 8 grammes.[1]

Eruptive Fevers. In these affections, as in catarrhal fever, the pulse is brought down: the eruption is also made to come out better. The beneficial influence of Aconite on the progress of the exanthemata, has already been mentioned, in a work published at Lyons—*La Pharmacopée de Vitet.* It does not appear whether the discovery of this property of the medicine belongs to Vitet, or whether it was stated by him at second hand.

Erysipelas. I agree with Drs. Fleming and Gabalda in believing, that Aconite diminishes the duration and the danger of this disease. I would wish to call the attention of surgeons to its value in erysipelas attacking wounds; so that my observations may be verified. I have several times seen a prompt and remarkable amendment follow the daily use of from 10 to 20 drops of the tincture, in cases of erysipelas, spreading around wounds and ulcers, and accompanied by severe constitutional symptoms.

Pneumonia. I agree with Dr. Fleming and the homœopathic writers in considering Aconite very efficacious in this disease.[2] When administered at the commencement, it tends to restore the suppressed transpiration from the skin, and may thus give a milder character to the disease: but if inflammation have actively set in—if auscultation reveal engorgement and condensation—we must not anticipate resolution from the exhibition of Aconite.

Mode of Administration. I am truly astonished at Dr. Fleming recommending the largest doses to be used when an antiphlogistic, rather than an anodyne or narcotic, effect is desired. However much I respect so distinguished an authority, I must state that my practice is entirely different. In a case of rheumatism, neuralgia, or any other affection in which I wish the calmative properties of the medicine, I give from 10 to 20 drops of the tincture, and gradually augment the dose to 3, 4, 5, or even to 8 grammes in the day; but, on the contrary, when I give it in the *courbature* or catarrhal fever, I order only from 5 to 10 drops in the twenty-four hours, and by such doses I bring down the pulse, and diminish all the other febrile symptoms, without inducing any symptoms of poisoning. I prefer the tincture, as more certain than the extract. The tincture diluted with one or two parts of water, may be applied topically in neuralgia; but used in this way, Aconite is an uncertain remedy.

SEPARATION OF THE STOMACH FROM THE ŒSOPHAGUS.

Mr. Flint, a medical student in the Jefferson Medical College, describes the following strange case in a letter to Professor Dunglison:—"The patient

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[1] Let us caution our readers not to use the tinctures in common use in this country in such doses. No physician ought to prescribe Aconite, without minutely specifying the preparation he intends to be used. That which we prefer, is Dr. Fleming's *Tincture of the root*, which is transparent, in colour like sherry wine, and of a slightly bitter taste. The following is the formula. "Take of root of A. Napellus, carefully dried, and finely powdered, sixteen ounces troy; rectified spirit, sixteen fluid ounces; macerate for four days; then pack into percolator; add rectified spirit until twenty ounces of tincture are obtained." Dose, from three to five minims in repeated doses.

[2] Why couple Dr. Fleming with homœopathic writers? In this country the homœopathists give, or pretend to give, their medicines in infinitesimal doses; and their practice is therefore only sanctioned by charlatans, or persons of morbid credulity. Dr. Fleming exhibits no tinge of homœopathy, and his work is most valuable and trustworthy.

was a male child; aged seven years; sick about three weeks; symptoms of worms were prominent—one was passed; cerebral symptoms followed, which terminated in death. Coma and unconsciousness were prominent symptoms for ten days previous to death. When roused from this state, he would eat a small quantity of gruel. He was treated for worms and cerebral symptoms. On the 4th inst., thirty-six hours after death, I opened the body in the presence of the attending physician and a member of this class. We carefully examined the intestines, beginning at the rectum and tracing the tube up to the connexion of the duodenum with the stomach, without meeting with a worm of any kind; but we noticed marked inflammation of the small intestines. We next directed our attention to the stomach itself, which, to our surprise, was found to be severed from its connexion with the œsophagus, and its contents, a dark-brownish mucilaginous-like fluid, poured out into the cavity of the abdomen to the left of the spinal column. We were not prepared to meet with a lesion of this character, and could account for it only by the action of the gastric acids producing *ramollissement* of this organ after death. In this opinion we were confirmed by the appearance of the liver; for besides evident marks of acute inflammation, the inferior edge of the left lobe, which had been in contact with the gastric fluid, was corroded and corrugated." [*Medical Examiner*, December 1848, p. 715.]

SURGERY.

CASE OF TRAUMATIC LESION OF THE GLOBE OF THE EYE.

Dr. Rivaud Landreau, of Lyons, relates the following remarkable case in the *Gazette Médicale de Lyon* for 14th February 1849:—On the 14th of August 1847, Madame Peyronnier, a portress, in endeavouring to separate two men who were fighting, received from one of them a blow with the fist in the left eye. The immediate consequence was abolition of vision, and the production of a swelling at the internal angle of the eye; this was followed by ecchymosis of the membranes of the globe and of the palpebral tissues. Severe pain was at the same time felt in the injured organ. Medical assistance having been immediately procured, leeches were applied around the orbit, and cold lotions to the eye; and an opiate mixture was ordered. Some days after, a purgative was administered, and a blister applied behind the right ear. These means having produced no relief, the patient consulted M. Landreau on the 21st of the month. On examination, he found, at the internal angle of the eye, close to the junction of the cornea with the sclerotica, and very near the centre of the palpebral opening, an ovoid tumour, of the size of a round pea, with a reddish base, and a slightly flattened summit, presenting a well-marked yellowish tint. Entirely surrounding the base of the tumour was a large violet-coloured ecchymosis, embracing the whole of the larger angle. In the anterior chamber, at its inner and lower part, were some drops of florid blood. The *tomentum* covering the anterior surface of the iris was dull and greyish; and, towards the lower part, and a little internal to this membrane, there was a partial laceration of the iris, of about the size of a millimetre (about 1-25 of an inch), having the form of a reversed V. The pupil was dilated to about double its usual dimensions, black, and perfectly immoveable. Vision was destroyed, from amaurosis. The transparent cornea was healthy, and the deeper humours of the eye appeared to be uninjured. The sclerotic and conjunctiva, at the smaller angle, shewed no vascular injection; the eyelids had the yellowish tint which usually follows bruises. The patient complained of violent pains in the injured organ, and in the whole of the corresponding side of the head. The tumour before described felt hard and resisting, but gave a sensation of slight fluctuation at the summit; which, with its yellowish tint, indicated the presence of pus. M. Landreau, however, hesitated to open it, being uncertain as to its nature; and, on attentively examining the globe of the eye, he thought he

perceived the absence of the crystalline lens, from an unusual depth of the posterior chamber, together with an oscillatory movement of the iris. Hence he imagined, that the blow on the eye might have produced rupture of some of the fibres of the sclerotica, and thereby occasioned an aperture sufficiently large to allow of the escape of the crystalline lens. It was probably, then, this latter body which produced the tumour under the layer of the conjunctiva. Acting on this hypothesis, he made a small opening over the tumour with a cataract knife. A drop of pus escaped, and he drew out at the end of his instrument a body, which he recognized as the crystalline lens, in an entire state. The tumour immediately disappeared; and there only remained some puffiness of the conjunctiva. The eye was ordered to be kept wet with cold lotions, and a purgative to be taken the next day. The patient was completely free from pain at the end of forty-eight hours, and there was little or no consecutive inflammation. The ecchymosis followed the usual course; and, in about eight days, all traces of it, or of inflammation, had disappeared.

The permanent effects of the injury have been perfect immobility of the pupil, and mydriasis, both resulting from the injury of the iris, which has resisted all means tried to remedy it. The laceration still exists, but is somewhat smaller. The retina has, under the influence of stimulant remedies, so far recovered its power, as to enable the patient to see with the aid of cataract glasses.

M. Landreau explains the phenomena of this case by supposing, that the blow on the eye was perpendicular, and in a direction from the temple towards the nose. Its immediate effect was the violent compression of the globe, and the crushing of the humours from without inwards. The sclerotic at the inner angle was forcibly compressed against the bony floor of the orbit, and its fibres were thereby distended and torn. Then the crystalline lens, violently detached from its suspensory ligaments, was forced through the laceration in the sclerotica; and, by the motion of return of the humours from their state of compression, was lodged under the conjunctival membrane. The violence of the blow also explains, in a very natural manner, the rupture of the ciliary attachments of the lower part of the iris, and the partial laceration of that membrane. The effusion of blood in the anterior chamber no doubt arose from the rupture of some of the vessels of the iris, when it was lacerated. It is also evident that the instantaneous paralysis of the retina, and the mydriasis, were effects of the compression and of the blow. There are two remarkable circumstances in this case: *first*, the absence of acute ophthalmitis, either external or internal; and *secondly*, the complete restoration of the function of the retina, after such a sudden and complete amaurosis.

EXCISION OF THE CLAVICLE.

Mr. H. G. Potter, Surgeon to the Newcastle-upon-Tyne Infirmary, relates the following case in the *Medical Gazette* of April 6, 1849:—Agnes Thompson, ætat. 42, married, and the mother of several children, was admitted into the infirmary, Sept. 21, 1848. She stated that her health was very good until about ten months ago, when she was much debilitated by continued night-watching, in consequence of illness in her family. She then felt, for the first time, rheumatic pains in the left arm, but did not notice any enlargement of the clavicle until between three and four months afterwards, when she perceived a small firm swelling about the middle of the bone. From that time the tumour has gradually increased in size, attended with lancinating pain, which is always worse at night, and prevents her from sleeping. The pain now extends down the arm, and has so impaired the use of the limb, that she is unable to perform her household duties. This pain, and consequent loss of sleep, have greatly injured her health, and she has now a very cachectic appearance.

The middle portion of the left clavicle was much enlarged, and painful to

the touch; it had a firm and inelastic feel; about an inch at each extremity was free from swelling. There was no evidence of any syphilitic taint in the system, nor did it appear that there was any hereditary tendency to disease in the family. Liniments and various other remedies had been tried, without any good effect. Leeches, and the internal use of iodide of potassium, were now tried, but no improvement took place; and, on the 31st of October, the tumour seemed even larger than it was a month before: it was also more painful.

Fearing that the disease might be malignant, and finding that the patient's health was daily becoming more impaired, Mr. Potter determined to remove the bone without further loss of time. The following operation was therefore performed:—

An incision, commencing at the sternal end of the clavicle, was continued throughout the entire length of the bone. Two other incisions were next made at right angles to the first, at about an inch from each end, and the flaps carefully dissected back. An aneurismal needle, armed with a stout thread, made fast to the eye of a fine chain-saw, was now passed beneath the clavicle, at about half an inch from its sternal end; and the saw by this means introduced below the bone, which was then sawn through. Disarticulation of the acromial end was next effected, and a loop of string fastened to the bone, so as to raise it up while the remaining portion was separated from its attachments. No vessel of consequence was wounded, and no ligature was required. On examining the bone after removal, the disease was found to be caries, which had extensively affected the under surface. It was also found that the whole of the diseased portion had been taken away. About half an inch of the sternal end was left attached to the sternum. No pain was felt during the operation, chloroform having been administered with perfect success. The lips of the wound were brought together with sutures and straps of plaster, over which, lint dipped in cold water, and a bandage, were applied. The arm was also properly secured to the side. The patient rapidly recovered, and left the infirmary in a month. On the 15th March, she was in a condition to go through her household duties, and felt her arm becoming every day stronger. There was no sinking of the shoulder, and, except when closely examined, no appearance of disfigurement.

CANNON-BALL WOUND: SLOUGHING: HÆMORRHAGE FROM THE EXTERNAL CAROTID: LIGATURE OF THE VESSEL: RECOVERY.

Dr. J. M. Steineb, Assistant Surgeon U. S. Army, publishes the following interesting case.

"Three or four days after the battle of Cerro Gordo, I volunteered my services to the Surgeon General to return to Plan del Rio, whither the most of our wounded had been conveyed after the action. Among others placed under my charge by the Senior Medical Officer, Dr. Cuyler, was an Illinois volunteer by the name of Todd, with the worst-looking wound I have ever beheld.

"This man was struck by a cannon ball, which carried away the left half of the inferior maxillary bone, stripping the soft parts from the superior maxillary as high up as the malar bone, tearing away the soft parts from the left side of the neck to within an inch and a half of the clavicle, laying bare the transverse processes of the second and third cervical vertebræ, and exposing the external carotid with the most of its branches. The wound, when I first saw it, was in a miserable condition, covered with fragments of the lacerated tissues, already gangrenous, and pouring forth an ill-conditioned sanies, the smell of which was intolerable. The constitutional symptoms corresponded with the condition of the wound. The pulse was small and corded, and exceedingly frequent, the tongue furred and dry, the skin hot, and harsh to the touch, and the bowels torpid. I dissected away the partially

loosened sloughs which covered the wound, and applied an emollient poultice. For the relief of the constitutional disturbance, a draught of salts was given, which having acted briskly upon the bowels, abated the fever, and the patient expressed himself much relieved. On the following day, the appearance of the wound was much improved, the pus assumed a more healthy character, and the man's spirits began to revive. The third day after my arrival, he was conducted on a litter to the general hospital at Jalapa, where I continued in charge of him, at the special request of Dr. Hill, then in charge of the volunteer division of the hospital. The treatment at Jalapa consisted exclusively in the application of the olive oil dressing, with proper attention to the regulation of the bowels, and the mild exhibition of opiates at night. Under this course he improved daily, the wound commenced granulating, and by the first of June he had nearly recovered, a small fistulous orifice communicating with the mouth alone remaining unclosed.

"As a different arraugement was made at this time by the Senior Surgeon in the assignment of the wards, Todd fell into the hands of another surgeon, and I saw no more of him for some time. At the end of two weeks, I think on the 15th of June, I was placed in charge of the sick and wounded, who were, by the order of the General-in-Chief, to remain at Jalapa, as they were deemed too unwell to be removed to Perote, where all, whose lives would not be manifestly endangered by the transportation, were being carried. To my surprise I found Todd among the number left under my charge. Upon an examination of his wound, I found it in a worse condition than when I first saw him at Plan del Rio. The neck was enormously swollen, the whole of the newly formed granulations in a sloughing condition, and a dirty, ill-conditioned pus running abundantly from the wound. The constitutional symptoms were similar to those at Plan del Rio. I applied to the wound a large emollient poultice, and administered 10 grs. of blue pill, followed in a few hours by a draught of the sulphate of magnesia. The next morning I thought it desirable to repeat the poultice, with the view of cleansing the wound and lessening the inflammation.

"On the afternoon of the same day,—the 17th—I was hastily informed by the steward, while at my quarters, about a hundred yards distant from the hospital, that Todd was bleeding to death. Upon arriving in the ward a few moments after, I found the poor fellow bathed in blood. Stripping the poultice from his neck, I tore away with my hand the gangrenous flesh which concealed the artery, when I was blinded by the gush of blood from the external carotid, which was the vessel ruptured. Pressing the right hand with all my force below the part ruptured, I succeeded in arresting the hemorrhage. The poor fellow was so much exhausted that I was obliged to turn him almost upon his head, in order that his brain might have the benefit of what little blood yet remained in his body. Having with care substituted the strong hand of an attendant in lieu of my own, in controlling the hæmorrhage, I made an incision from the left sterno-clavicular articulation, extending obliquely upwards and backwards two inches in length, with a view of ligating the carotid artery. The neck was so enormously enlarged, and the tissues so much altered, that I encountered more difficulty in effecting my object than I expected. I encountered the vessel, however, and having carefully separated it from the vein and nerve, succeeded without trouble in ligating it. Upon measurement, I found the depth of the incision an inch and three-quarters. For two days he was kept regularly on wine, and boiled milk and toast. Two days after, all the sick were removed to Perote. The few days I was in this place Todd rapidly improved. I left Perote ten days after the performance of the operation, for the city of Puebla, but have learned since, through several sources, that the man is entirely well, and only waiting an opportunity to leave for home." [*Medical Examiner* (Philadelphia), January 1849, p. 14.]

OBSTETRICS.

NEW METHOD OF TREATING STERILITY, BY THE REMOVAL OF OBSTRUCTIONS OF THE FALLOPIAN TUBES.[1] BY TYLER SMITH, M.D., LOND.

Since Dr. Tilt's valuable paper in our present Number[2] was printed off, the following Essay, by Dr. Tyler Smith, has appeared in the *Lancet*. It is of sufficient importance to justify our reprinting it without any curtailment:—the more especially as we have had to-day (26th May) an opportunity of seeing Dr. Smith introduce, with ease and rapidity, a fine whalebone bougie into the Fallopian tube of an unopened uterus. By means of a hollow silver tube, suitably curved at the distal end, the point of the whalebone instrument was conveyed to the cornu of the uterus, and was then made to pass into the tube.

"In a lecture published in the *Lancet* of September 16, 1848, (vol. ii, p. 309,) I refer to the variety of Sterility dependent on the state of the Fallopian tubes, and I observe that 'I have recently devised and performed an operation connected with these tubes, for the removal of Sterility.' My proposal to explore the Fallopian tubes was somewhat prematurely criticized in the *British and Foreign Medico-Chirurgical Review* for January 1849, and this criticism, by a writer whom I nevertheless hold in the highest respect, it was, which mainly induced me to delay the publication of a paper I had prepared, describing the operation, and the instruments used in its performance. In the mean time, I continued to mature the operation, and made no secret of the matter to any of my friends. But the subject has since been referred to incidentally, in such a way that I feel I ought not longer to delay placing it before the profession. In a paper on Sterility the result of Ovarian Disorder, read by Dr. Tilt, at the Westminster Medical Society, at the meeting of April 28, the question of deobstructing the Fallopian tubes was mooted. The following is the report of a portion of Dr. Tilt's paper, at the reading of which I regret I was not present:—'This imperfection (Sterility) was the result (among other causes) of lesions in the tube destined to convey the ovula to their uterine abode. He likewise stated that Sterility was sometimes produced by the uterine extremities being blocked up by a glutinous deposit, and asked, Whether there was any possibility of doing for these organs what Mackintosh and Simpson have done in similar cases of temporary occlusion of the neck of the womb?' I perfectly agree with Dr. Tilt respecting the existence of this form of Sterility, and it will be seen that I had by anticipation answered his question in the affirmative, though I presume that of this Dr. Tilt had no knowledge whatever.

"Perhaps I cannot do better than state the way in which I was led to entertain the practicability of deobstructing the Fallopian tubes. In January 1847, I was consulted by a lady who had been married twelve years, to a husband in good health, without having borne any children. As a large property and a title depended upon her having offspring, her presumed Sterility was a source of great anxiety; producing more conjugal unhappiness and dissension than can well be described. The lady was in good health, the catamenia were regular, and there was no uterine or ovarian disorder sufficient to prevent impregnation. This I ascertained by the most careful examination. It occurred to me, in treating this case, as it must have occurred to many others under similar circumstances, that some Fallopian impediment to the descent of the ovula, or the ascent of the spermatic particles, might

[1] It is now nine months since I performed the first operation on the Fallopian tubes. I mention this fact at the commencement, to show that I have not been in rash haste to publish upon the matter. At every step I have taken respecting it, I have endeavoured to exercise the utmost caution.

[2] Vide Dr. Tilt's paper, p. 510.

exist, as the cause of the infecundity. As the case was important, I took the opinions of two or three eminent obstetric physicians, as to the possibility and safety of exploring the tubes, but I met with so much discouragement that I did not then attempt it. If I listened to the same authorities, now that I have surmounted the difficulty, I should still desist from publishing any account of the operation; but it seems to me right, and a duty, that I should do so. The lady I have referred to, left London after undergoing the ordinary treatment without any subsequent success. From this time, however, I began to entertain the possibility of reaching the Fallopian tubes, so as to render them objects of curative treatment.

"Pursuing my inquiries, I learnt that one of our most distinguished obstetric physicians, and also an eminent surgeon of the metropolis, had separately tried to devise an operation for the deobstruction of these tubes. The first, by passing a small bougie in at the os uteri, and attempting in this way to direct it towards the mouth of the tube; the second, by proposing to obtain a sight of the uterine extremity of the tube by the aid of my friend Mr. Avery's very ingenious lamp and reflecting tubes. I believe both attempts were quite unsuccessful.

"There is an operation of Gairal, a French surgeon, a modification of catheterism of the Eustachian tube, consisting of the introduction of a fine whalebone bougie through the Eustachian tube into the cavity of the tympanum, which I had often performed, and which it seemed to me might be made applicable to the Fallopian tubes. In this operation, the Eustachian catheter is passed to the guttural extremity of the Eustachian canal, and then a whalebone bougie, quite flexible from its fineness, is passed through the catheter and the Eustachian tube into the tympanum. When the bougie has been passed, it can be seen through the semi-transparent membrana tympani. Gairal's operation was used to dislodge thickened mucus from the tube, to dilate contractions, or to stimulate the mucous membrane in unhealthy states of the tube.

"The following is the manner, accompanied by all the cautions I could devise, in which I determined the practicability of the Fallopian operation. I procured the uterus and appendages from a subject who had never conceived, and having first divided the uterus into two symmetrical halves, I moulded a small tube of flexible silver into such a shape, that when passed through the os uteri, it pointed accurately to the uterine mouth of the Fallopian tube on one side. It was necessary to arrange the tube so that it should pass through the os and cervix uteri in the undivided organ, and not

only point towards the Fallopian angle of the uterus, but also direct a fine fibre passed into the silver tube, in the line of the Fallopian canal. The proper shape was obtained by a short abrupt curve, at the extremity of the catheter. After this I ascertained, by trying the tube thus bent, upon a perfect uterus, that it could be passed with ease into the uterine cavity, directed towards the orifice of the Fallopian tube, and withdrawn again from the uterus. I next ascertained the calibre of the canal of the Fallopian tube, by using fine wires of different sizes; and having prepared a whalebone bougie of the proper fineness, I found it could be directed with the utmost accuracy towards and into the Fallopian tube. The Fallopian angle of the uterine cavity is so acute, and the internal surface so smooth and dense in this situation, that it is almost impossible for the whalebone fibre to miss the tube. This readiness of the passage of the bougie is favoured by the anatomical shape of the uterine cavity. In the middle of the triangular cavity of the upper part of the uterus, the anterior and posterior walls project so as to touch, or nearly to touch, each other; but, from the orifice of the cervix to the Fallopian tubes on each side there are two lateral sulci, or grooves; and there is also another groove, extending at the fundus uteri from one Fallopian tube to the other. This triangular sulcus thus surrounds the promontories in the anterior and posterior uterine walls. The groove at the fundus is very useful in directing the beak of the catheter to the Fallopian orifice. Of course it is necessary to have two silver tubes or catheters, one for the left, the other for the right Fallopian canal.

"After making these preparatory observations on the uterus and Fallopian tubes, when removed from the body, it became necessary to alter the apparatus so as to suit the living subject. The only modification necessary was to adapt the tube or catheter to the large curve described by the vagina and the uterus. For this purpose I had an instrument made by Mr. Thompson, of Windmill-street, having the curve of the uterine sound to adapt it to the uterus and vagina, and an additional lateral curve at the extremity, turning towards the Fallopian tube. When completed, this instrument was not so large as the uterine sound, or the intra-uterine pessary. The whole of the uterine length of the catheter was graduated so as to measure the depth of the uterine cavity. I also had a fine whalebone bougie, very flexible at the extremity, and graduated at the handle like Gairal's bougie, in order to show the depth to which the extremity enters the Fallopian tube. The important point, it will be seen, was that of obtaining a directing-tube, accommodating itself to all the different curves of the sexual canal.

"Two of the preceding wood-cuts give front and side views of the Fallopian catheter, reduced in size,—the first showing the utero-vaginal curve, the second, the Fallopian curve of the instrument. The other figures represent the whalebone bougie, also reduced.

"An opportunity soon presented itself, and I attempted the operation on the living subject. The patient was about twenty-five years of age, the uterus had never been impregnated, and was in the normal situation. I mention this, lest it should be supposed to have been a case of prolapsus, in which the operation would of course be more easy and simple. Having lodged the os uteri in one of Mr. Fergusson's specula, I first passed the uterine sound to the fundus uteri, so as to assure myself that no uterine impediment existed; after this, I passed in the Fallopian catheter very readily, and directed it towards the left Fallopian orifice. Steadying the catheter in this position with the left hand, I introduced the whalebone fibre through the catheter, and into the Fallopian tube, for about an inch and a half, with the greatest ease,—indeed I was surprised at the ease with which it passed; but this I attributed to the great care I had taken in maturing my plan beforehand. I withdrew and re-introduced the bougie several times, without producing any pain or uneasiness whatever. In fact, the only difficulty met with, was in passing the sound through the constricted portion of the cervix uteri.

"In the operation upon the Fallopian tube, the patient was not at all conscious of any sensation of any kind, more than from the ordinary specular examination. I found it easier of performance upon the living than the dead subject; or rather, I was able to pass a larger bougie than would have entered the Fallopian tube of the preparation. From my subsequent observations, I have no doubt whatever that the calibre of the tube is greater in the living than in the dead, owing to the contraction which occurs in the tissues of the latter. I have now performed the operation repeatedly, in the same manner, without pain or difficulty, or any subsequent inconvenience whatever, as far as the mouths of the tubes are concerned. When the tubes are not imperforate, they can, with due care, be readily operated upon, if the sound can be passed to the fundus uteri. Of course it is necessary that the operator shall be familiar with the use of the speculum, so as to command the os uteri with ease; and the uterus must not be materially displaced, otherwise the utero-vaginal curve of the instrument will not be adapted to the curve of the organs themselves. Where any difficulty is experienced, it will not be at the Fallopian tubes themselves, but before reaching these organs. This is in consequence of the very different state of the vagina and the os and cervix uteri in different women. The os uteri and the uterine cavity should be in a healthy state at the time of the operation.

"One word as to any supposable ill results from the new operation. I have not observed any bad symptom whatever which could fairly be attributed to it. Nor are any, as I believe, to be expected, in careful hands, if we throw aside the nameless fear which always attaches to any attempt to deal with organs hitherto sacred from the touch of the medical practitioner. As regards the uterus, the operation is less formidable than the passage of the full-sized uterine sound; the dilatation of the os uteri by the dilators in common use among obstetricians; the introduction of medicated bougies into the cavity of the uterus, and many other applications of obstetric surgery to this organ. As regards the Fallopian tube, though the bougie is calculated to remove obstructions, it is too flexible to injure the very dense structure of the uterine extremity of the tube. Any irritation it can produce, if used with caution, is inconsiderable, when compared with the monthly irritation to which these tubes are subject physiologically. As regards the peritonæum, there can be no danger whatever of peritonitis, as it is not proposed to approach the fimbriated extremities of the tubes, where the lining membrane becomes continuous with the peritonæum. It is in the narrow portion of the oviducal canals, near the uterus, where the removable obstructions occur. But the best answer to hypothetical objections of this kind which are sure to be raised is, that in practice no peritonæal disturbance has ever followed the operation. At the same time, I would urge great caution in the performance of the operation, particularly by those who are not accustomed to the use of the speculum and the actual treatment of uterine disorders.

"On considering the subject, it appears to me extraordinary that the Fallopian tubes have not been brought within the province of remedial manipulation before. It is the characteristic of modern surgery to penetrate more and more into the recesses of the body. We have operations upon the Stenonian ducts, upon the lachrymal ducts, and upon the Eustachian tubes, quite as delicate as that which I have now described upon the Fallopian tubes. Surgery has long since applied itself successfully to the urethra, the rectum, the trachea, and the œsophagus. I can only account for the neglect of the Fallopian tubes, because of their depth from the surface; but, by the speculum, the os uteri is, in effect, brought to the surface of the body; and the distance from the os uteri to the mouth of the tubes is short, and without any material impediment.

"In a future communication, I propose to give some further particulars respecting the operation, and its application in practice, but particularly with reference to the removal of Sterility by deobstructing the Fallopian canals at

their narrowest and uterine portion. I do not mean to assert that obstruction or occlusion of the Fallopian tubes is the most prevalent cause of Sterility, but it must undoubtedly be a common cause of this affection. No one conversant with the anatomy of the generative canal can doubt that a small plug of inspissated mucus or coagulum may occasion barrenness. I believe the operation I have described ought, where there is no special contraindication or difficulty, to be cautiously performed, in all cases where there is the desire of offspring, and where the Sterility is not remediable by ordinary measures." (*Lancet*, 19*th May*, 1849.)

SUCCESSION OF MONSTROUS BIRTHS OCCURRING IN THE SAME FEMALE.

The following is an extract of a letter to Professor DUNGLISON, from Dr. J. MARTIN, dated Philadelphia, December 4th, 1848.

"I will cite cases of monstrosity occurring in a lady with whom I have been acquainted for about fourteen years. Previous to that time, she gave birth to two well-formed, and well-featured children. I attended her in the first case of monstrosity. At the period of my earliest acquaintance with her, she moved in the middle walks of society, and had enjoyed good health up to that time. She was well developed in figure, and gave birth to a child perfectly formed in every respect, with the exception of its head and face. The eyes were placed at the top of the forehead, and all the superior and posterior parts of the head were deficient, the corresponding bones of the cranium being wanting, and the opening fringed round with something very like liver. Her labour was attended with no difficulty; but the liquor amnii was very abundant, and the child was still-born. She had a speedy recovery. In about eighteen months after this, she gave birth to another child which was properly developed as to face and head, but the flexor muscles of the legs and arms were in fault: I could not straighten its legs, arms, fingers, or toes, owing to the flexors being too short. Her labour, this time, was not so easy, in consequence of the arms being flexed on the breast, and the hands below the chin; yet it was not attended with much difficulty, and the liquor amnii was again abundant. The next two confinements were similar to the first I have detailed, in every respect, the monstrosity being the same; from both she had a speedy recovery. At the next (in the winter of 1843–4), I was not present, being in attendance on the medical lectures in Philadelphia, but I understood that the labour was not accompanied with more severity than is common to women. The child was defective on the top of the head, and the liver-like growth was there as in the other births. In 1846 she was confined again, and I was summoned to watch over her difficulties during her labour. She was in great hope that she would have a perfect child, being led to this conclusion by the strong movements of the child *in utero*. During the labour the os tincæ dilated rather reluctantly; but when dilatation did occur and the membranes were ruptured, a great discharge of liquor amnii took place, and I was enabled to discover that the head was defective while it was still at the superior strait. The deficiency was the same as in the other instances, but it was born alive and lived about three hours, and moved and made considerable muscular exertion. There was hemorrhage from the liver-like production on the top of the head. This child assumed a cerulean hue, becoming more livid from the moment of its birth till its death. The lady recovered rapidly. The last misfortune was in 1847, when she had a miscarriage; the embryo was about two inches in length, and the defect at the top of the head could be very readily discovered. Here then, are five cases of mature labour, the products of which were all defective at the top of the cranium, one carried to the full term and defective in the flexor muscles, and one abortion, in which the embryo exhibited the same defect at the upper portion of the cranium, and all occurring in the same female, apparently in the enjoyment of perfect health." [*Medical Examiner*, January 1849, p. 24.]

DR. J. Y. SIMPSON ON THE DISCOVERY OF THE AIR-TRACTOR.

Dr. SIMPSON has printed the following letter in the *Medical Gazette*, from which it appears that Dr. MITCHELL's accusation (p. 386) was unfounded :—

Sir,—It certainly was neither my wish nor intention to join in the controversy relative to the Air-tractor, which you have lately given in the pages of the *Gazette*. But as you have thought fit to write editorially on the matter, in your last number; and as your own remarks, and those of your correspondents, are, I think, calculated to do me unintentional injustice, I hope you will excuse my troubling you with one or two observations merely in my own personal defence.

1. In the *Gazette* for March 23rd, you published a short anonymous letter containing the following accusation: "Dr. Simpson, of Edinburgh, lays claim to the merit of discovering the applicability of atmospheric pressure in aid of delivery." Now this accusation is totally groundless, because it is totally untrue. I never laid claim to any such merit. On the contrary, I have always given it to whom it is due, viz. to Dr. ARNOTT. In the first published notice of the subject, I quoted in full Dr. Arnott's own words, in which he suggests the principles of the instrument. Could I do more? Let me add, that Dr. Arnott first published the suggestion in 1827; and at that time the Editor of the *Medical Gazette* both derided the proposition and its originality.[1]

2. Dr. MITCHELL sets out in the first sentence of his first letter to me, as given in your pages, with stating "I was rather surprised to find that you had not acknowledged me (Dr. Mitchell) as the discoverer of the application of the principle in such instrument." I have already stated that I gave the merit where I deemed the merit due, viz., to Dr. Arnott; and I was not, till the last month, in the slightest degree aware that Dr. Mitchell had in any way attended to the subject, though I knew that other gentlemen had made attempts to reduce Dr. Arnott's suggestion to practice,[2]—but without success. I feel certain that if Dr. Mitchell will only get an instrument constructed on *his* proposed plan (as given in the sketches he has sent me in his first letter), he will find, I believe, that it is powerless and useless, and that it is not applicable in practice.

Let me add, that I am sure that no man can honestly accuse me, on any occasion, of ever failing, either in lecturing or in writing, to do every possible justice in my power to other investigators, and in distributing *suum cuique*, as far as my knowledge went.

3. In the first published notice of the Air-tractor (see Monthly Journal for February, p. 556, and *Medical Gazette* for March 16, p. 480), after mentioning the first case in which it was tried, in December last, I added that I "was not aware that any one had applied practically these obstetric means, before it was employed in the case detailed. But the idea of using such a power had been long ago proposed by a gentleman, for whose works and talents they all entertained the utmost respect,—Dr. Neil Arnott, of London. In his admirable work on Physics, Dr. Arnott alludes to the subject in the following words," &c.

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[1] "We find the old sucking horn of Hildanus brought into use for a most extraordinary purpose, being no less than to draw the child out of the womb. And we find a renewal of that most absurd idea, noticed in Paré's work, and so well ridiculed in Mr. John Bell's Principles of Surgery, of applying a *child's sucker* to raise depressions of the fractured skull. Where is the limit to absurdity?"—*Medical Gazette*, vol. i, p. 19.

[2] As, for instance, Mr. Paul, one of the best pupils that attended my class during the same year as Dr. Mitchell. Mr. Paul proceeded in the matter much further than Dr. Mitchell. He did not, like Dr. M., merely write and theorise about an instrument, but tried to make one. Dr. Mitchell alludes to my suggesting the investigation, as a fit subject for the ingenuity of my pupils, in 1847-48. When lecturing, I have always been constantly in the habit of directing specially the attention of my pupils from time to time, to subjects open for new inquiry, and tried to stimulate them to think on such matters for themselves, write their theses on them, etc.

In commenting upon this statement, Dr. Mitchell, in the *Gazette* (p. 531), observes,—"He (Dr. Simpson) states that no one before himself, as far as he was aware, had made a practical application of Dr. Arnott's suggestion. The medical public (adds Dr. M.) will now see that he must have been perfectly well aware of its previous application by me." Now I still believe, that up to the time at which the above notice was published by me, no one had applied the aforesaid principle in practice. Dr. Mitchell avers he had applied it previously. If Dr. Mitchell will give the date of any case or cases, in which he applied it, that date would settle the question; and I will at once yield the point if I am wrong.

4. In answer to Dr. Mitchell's first letter, I assured him that in the construction of the Air-tractor I received no hint or suggestion "from his competition exercises, and that I never, as far as I knew, looked at these exercises, as the whole were entrusted to others to decide upon." Allow me to add, that not only did I not read Dr. Mitchell's exercises, or those of the other competitors, (four of whom were rewarded with prizes), but up to the date of his letter to me I never heard, from himself or from any other person, the most distant hint of any ideas of his about the construction of an Air-tractor.

On asking Dr. Duncan, who read the exercises over, he assures me, that that from the time of his looking over the papers till I showed him Dr. Mitchell's letter, he had no remembrance whatever of Dr. Mitchell alluding to the subject; and his observations on it, let me add, must, I think, have been entirely out of place in such exercises, as none of the twelve questions given out referred at all to instrumental delivery. If Dr. Duncan did not attend to such a subject, thus irrelevantly introduced into the exercises, and in which subjects he (Dr. Duncan) was in no respect interested, I do opine he was in no degree to blame, as you seem to think he was.[1]

5. In my note to Dr. Mitchell (see *Gazette*, p. 520) I stated, that "I had thought and talked often of making an Air-tractor, such as I have latterly constructed, long before you were my pupil."

Dr. Mitchell affects to doubt this. I have mentioned Dr. Arnott's suggestion and the subject publicly, at more or less length, every year in lecturing, since I commenced teaching midwifery, ten years ago. It very seldom does happen that a subject of mere medical conversation happens to be a subject of actual record; but in this case it oddly and fortunately enough happens that it is so. In February, 1848, six or eight weeks before Dr. Mitchell's prize exercises were written in my class rooms, Dr. Clay, of Manchester, was called down professionally to Edinburgh, to perform the operation of ovariotomy. In his Obstetric Journal for 1st February last, Dr. Clay, in speaking of the Air-tractor, the utility of which he doubts, observes: —"The instrument is not new to us, having *conversed* with Dr. Simpson a year ago on the subject." (p. 60.)[2] At last, in December, 1848, I was induced to see about the construction of a proper instrument in consequence of witnessing, in the Royal Infirmary here, some trials with the artificial French leech; and at first I thought that an exhausting cylinder and piston, on the same principle, would answer best. In pursuing the investigation after it was once begun, I had to make innumerable trials with, and changes on the instrument, before I obtained a form practically and really useful.

6. Dr. Mitchell purports to report correctly, to you and to your readers,

[1] Of course we do not blame Dr. Duncan for want of memory. As Dr. D. decided against Dr. Mitchell, he must have read his papers; and we confess that it appeared extraordinary to us, that, although no long time had elapsed, he did not recollect that a description of an Air tractor had been given in one of his exercises,—when public attention was so strongly called to the invention by Dr. Simpson. It is evident, however, from Dr. Simpson's statement, that he (Dr. S.) knew nothing of the contents or relative merits of the papers, and that Dr. Duncan had wholly forgotten this reference to the Air-tractor. EDITOR of *Med. Gaz.*

[2] Dr. Simpson has forwarded to us a letter from Dr Paterson, by which it appears, that so long back as the year 1836, the subject of the Air tractor had been discussed by them. EDITOR of *Med. Gaz.*

various circumstances relative to my statements in lecturing and awarding the prizes, etc.; and founds various conclusions upon his own memory for his own argument. Dr. Mitchell says, that in my lectures I stated that I had "attempted in vain, at the Edinburgh Maternity Hospital, to apply a leather sucker to a child's head." I did not state any thing of the kind, because I never made any such attempt. I never tried till last December to apply the principle in actual practice.

7. Lastly: permit me to observe again, that we are indebted to Dr. Arnott for first suggesting the "applicability of atmospheric pressure in aid of delivery." And if I have any claim to any merit in the matter, it is this,—that after Dr. Arnott's idea had lain dormant and useless for twenty years, I reduced Dr. Arnott's suggestion to actual practice,—was the first to construct a useful and applicable Air-tractor,—the first to use such an instrument in practice,—and the first to point out the cases fit for its use. Further, in the construction of the Air-tractor I was indebted to no one but Dr. Arnott, in even the remotest degree, for any hint or aid whatever. I may be, perhaps, excused for adding, that I have now employed it repeatedly, both in cephalic and pelvic presentations, and both when the head was still high above the brim, and already sunk into the pelvic cavity; and I believe that the construction of the Air-tractor is still very far from being so perfect as it will yet be rendered.—Yours, etc., J. Y. Simpson.

CONGESTIVE DYSMENORRHŒA.

Mr. James Whitehead, Surgeon to the Lying-in Hospital, Manchester, in a paper published in the *Medical Gazette* of April 13, 1849, states the following opinions: "1. There is a form of Dysmenorrhœa, unaccompanied with specific structural change, which differs in its pathology from the two forms hitherto acknowledged" (the membranous and mechanical, described by Dr. Oldham in the *Medical Gazette* for November 1846), "in the absence of those adventitious structures which sometimes escape along with the catamenial current, on the one hand; and on the other, in having the lower uterine canal free from all obstruction or impediment of a mechanical nature,—conditions which characterise these two morbid states respectively. 2. The form of disease which I have attempted to describe, depends on a congested state of the vascular system of the uterus, similar to what obtains in the preliminary stage of metritis; and which condition may be designated, until a more suitable term be suggested, Congestive Dysmenorrhœa. 3. This condition is capable of materially interfering with the function of reproduction; and may be a cause, so long as it exists, of sterility."

LABOUR ACCOMPLISHED THROUGH THE PERINEUM: RECOVERY.

The following is an abridgment of a case recorded by Dr. S. C. Ellis, in the *New York Journal of Medicine* for November 1848, as quoted in the *American Journal of the Medical Sciences*, January 1849.

The patient was thirty years of age, primipara. The head was found pressing on the perineum, which was very tense, and there was little or no detension of the os externum vaginæ. Laceration of the perinæum took place, and the child and placenta were delivered through the opening. The laceration began about an inch from the anus; at first it was transverse, then run on each side the vulva, making a ragged, irregular wound; so that at least one half of the vulva, including the entire *fourchette*, was hanging loose, and so completely detached, that, in the examination it was turned up, and lay over the pubes. The labour was, to the patient, remarkably easy and quiet; and she had no idea of the manner in which her delivery had been accomplished. The parts were put in position, and a light compress applied over the wound; and in five weeks she had perfectly recovered. Had there been a hymen, Dr. Ellis thinks it would not have been destroyed.

MISCELLANEOUS INTELLIGENCE.

ROYAL OPHTHALMIC HOSPITAL. The annual dinner of this Charity took place lately, at the Albion Tavern, and was attended by upwards of seventy gentlemen. The Lord Mayor presided. The toast of the evening—viz., "Prosperity to the Institution"—was coupled with the "Health of Dr. Farre," and was proposed by the Lord Mayor. He stated that, since the establishment of the Charity, upwards of 200,000 patients had been relieved by it, and that the sight of 250 patients, born blind, had been restored through its agency. Dr. Farre, in reply, pointed out that the Hospital had educated, in a thorough knowledge of eye diseases, 1,496 medical gentlemen. It had been the parent and model of many similar institutions all over the world. In India and China, these branch institutions had exercised the most powerful influence on the minds of the natives, and, to a very great extent, in consequence, medical men in the East were becoming the pioneers of civilization. Dr. Farre concluded by proposing the memory of John Cunningham Saunders, the founder of the Charity, whose talents and untimely death he dilated on with affectionate regret. The Secretary, during the evening, announced a list of subscriptions, amounting to more than £700.

CHAIR OF MEDICINE IN UNIVERSITY COLLEGE. Dr. Walshe, Dr. Golding Bird, and Dr. Sibson, are said to be candidates for this vacant Professorship.

BEQUESTS TO UNIVERSITY COLLEGE. The following munificent legacies have just been received for the benefit of this institution:—From Thomas Dyson, Esq., of Diss, Norfolk, £100, duty free; Mrs. Kennedy, of Pennsylvania, near Exeter, £500; Charles Filica, Esq., of Park-crescent, £250; and John Curteis, Esq., of Devonshire-place, £500. The £300 bequeathed by Dr. Fellowes, "to be added to the permanent endowment of the hospital," has also been lately paid, without deduction of duty.

NAVAL ASSISTANT SURGEONS. The Royal College of Surgeons of Edinburgh, the Royal College of Physicians of Edinburgh, and the Faculty of Physicians and Surgeons of Glasgow, have done themselves honour by petitioning the Legislature to relieve the naval assistant surgeons from the grievances and indignities to which they are at present subjected. We hope, for the honour of the British navy, that the needed reforms will be speedily accomplished; but, in the mean time, it may be well for our young friends to consider the following questions proposed (in *Lancet* of 26th May) by Dr. Fred. James Brown, of H.M.S. *Howe*:—*Questions for every medical man to propose to himself, before applying for an assistant-surgeoncy in the Royal Navy.* 1. Having studied five years, and received a diploma in surgery and a license to practise medicine, can I submit to the irksomeness of assisting a naval surgeon for twice that period? 2. Granting that I am of a submissive disposition, and capable of passing through this first stage of a surgeon in the royal navy, can I so far humiliate myself as to accept position and treatment similar in every respect to that accorded apprentices on shore? For example:—First, must I dine with the children, and dispense with a private sleeping apartment? Secondly, must I be excluded from the society of visitors, or only introduced with the "young gentlemen"? Thirdly, must I brush my own clothes and my boots, and even make my own bed, unless I pay a servant to do these things for me, who might refuse if he thought proper, as servants are not allowed by the rules? 3. On receiving a commission from the Admiralty to do the duty of a naval surgeon, after eight or ten years' servitude, shall I be able to do that duty as well as on the day I first entered the service? For instance:—First, will the neglect of reading and

study (which naval assistant-surgeons state to be an evil inherent in the present system in her Majesty's ships) cause me not only to retrograde in the science of my profession, but also to lose most of the zeal and energy I now possess? Secondly, shall I not be morally responsible for the deaths of patients which may occur as a consequence of my deteriorated skill in the art of the prevention and cure of disease? On a calm consideration of these questions, am I justified in becoming a candidate for an assistant-surgeoncy in the royal navy?

Westminster Medical Society.—During the session which has just closed, this Society has received an accession of above fifty new members, and has commenced a periodical publication of an authorized version of its Proceedings. Two fasciculi have appeared. About 100 Fellows of the Society dined together at the Thatched House Tavern on the 24th May.

Bequest to found a New Hospital at Edinburgh. Mr. George Chalmers, plumber in Edinburgh, who died in March 1836, bequeathed about £30,000 for the erection and endowment of an hospital for the "Sick and Hurt"; and vested the management of the Charity in the Dean and Faculty of Advocates. The money has been accumulating; and various attempts have been made, from time to time, in order to induce the trustees to devote the funds bequeathed to their care to their proper destination, but without success. We are, however, glad to learn that the Faculty of Advocates have at last seen the propriety of moving in the matter, and that they are taking measures with the view of carrying out the will of Mr. Chalmers.

Scottish Public Health Bill. The Edinburgh Town Council and Commissioners of Police have each sent a deputation to London to watch over this measure. Both bodies seem to hold nearly the same views. The Town Council, at their last meeting, approved of the report of their Committee, who were of opinion, by a majority, that there should be a General Board of Health located in Edinburgh, rather than in London; and suggested that the Board of Supervision, with the addition of the Presidents of the Colleges of Physicians and Surgeons of Edinburgh, could accomplish all the objects contemplated by the institution of a general Board. The Committee were also of opinion, that wherever there was a local Police Act, the powers of the Commissioners under which extended over an entire town, such Commissioners should, by express enactment, be declared the local Board of Health. The Council approved of the report, on the understanding that, unless the suggestions of the Committee were introduced into the bill, the Council opposed it. Would it not be more judicious to allow the Colleges each *to elect* their Presidents or any other Fellows whom they considered better fitted? The *ex-officio* appointment of gentlemen who have many other duties to attend to seldom conduces to the public good.

Night Visits. Within what hours ought physicians and surgeons to consider their visits as "Night Visits," and charge for them accordingly? This question has recently been submitted to, and solved by, a legal tribunal in Belgium. After hearing various witnesses, it was decided, that *all visits made between* 9 P.M. *and* 6 A.M. *ought to be regarded as night visits.* This decision seems to be just and reasonable, both to patients and medical men.

Clot Bey, the famous French physician, so long in Egypt, has been dismissed by Abbas Pasha with a pension, on condition of his living out of Egypt.

APPOINTMENTS.

ROYDE, George, Esq., elected Honorary Surgeon to the Brighton Dispensary.

JOBERT, M. (de Lamballe), appointed Surgeon to the Hôtel-Dieu at Paris, in the place of M. Blandin.

OBITUARY.

BARON, Dr., of the Hôpital des Enfans Malades, has lately died at Paris. He was much esteemed, and extensively consulted in the diseases of children.

BERLIE, M., Interne at the Saltpêtrière, Paris, lately, of cholera.

CARIOLI, Dr., Professor of Clinical Surgery in the University of Pavia, lately.

DUKE, John, M.D., at Silverstone, near Towcester, from injury to the brain, produced by a fall, on 19th April, aged 28.

GRUNDY, William Lord, Esq., Surgeon, at Wolverhampton, of typhus fever, contracted in the pursuit of a profession to which he was ardently attached, on the 18th May, in the 30th year of his age.

HANCOCK, Thomas, M.D., at Lisburn, Ireland, of disease of the heart, on 16th April, aged 66.

HARRIS, Francis, M.D., at Croydon, on the 5th May, aged 59.

LONDE, M., Interne at the Saltpêtrière, lately, of cholera. The obsequies of MM. Londe and Berlie were performed on the 19th May, amid the lamentations of their comrades, by whom they were much esteemed.

MORISON, Charles, M.D., Physician to the Forces, at Paris, of cholera, on 4th May. Dr. Morison was long in the Royal 10th Hussars, and served in that regiment during the campaign of General the late Sir John Moore, as also in the campaigns of Field Marshal the Duke of Wellington in the Peninsula.

PEMBERTON, Dr., of Ballinrobe, Ireland, of cholera, on 16th May.

ROBERTS, John, Esq., Surgeon, at Bangor, North Wales.

SCARD, Edward, Esq., Household Surgeon to his Royal Highness the Duke of Cambridge, at Kew, on 22nd April, aged 41.

SORMANI, Dr., of Milan, aged 49. Dr. Sormani was author of the following contributions to medical literature: *On the Causes of Sudden Death*; *On Angina Pectoris*; *On Hydrophobia*; and an unpublished monograph on *Typhus Fever*.

STREETEN, R. J. N., M.D., at Worcester, of a bronchial affection, after a lengthened illness, on the 10th May. Dr. Streeten was Secretary to the Provincial Medical and Surgical Association, and one of the Editors of the *Provincial Medical and Surgical Journal*; he was also one of the Physicians of the Worcester Dispensary. He was a worthy man, and scrupulously honourable in his social and professional relations. He has bequeathed little of his labours to posterity, save his editorial remarks in the pages of the Journal, which he so ably edited for some years past. He was thrice married.

THOMPSON, S. S., M.D., Physician to the Belfast District Lunatic Asylum, at Belfast, on 30th April, aged 70.

TURNER, Edward P., Esq., Surgeon, at Feckenham, Worcestershire, on 5th May, aged 31.

WARDEN, W., M.D., Surgeon of her Majesty's Dockyard at Chatham, on 23rd April, aged 72.

WEST, Joseph John, M.D., at Brighton, on 3rd May, aged 66.

BOOKS RECEIVED.

BENNET (Dr. J. Henry) on Inflammation of the Uterus. 2nd edition. London: 1849. BRYSON on Epidemic Fevers of Sierra Leone. London: 1849. CLINICAL MEMORANDUM BOOK, published by Highley. London: 1848. FORBES Physician's Holiday. London: 1849. GILBERT on the Extraction of Teeth. London: 1849. GREAM on Chloroform in Midwifery. London: 1849. HADDOCK on Somnolism and Psycheism. London: 1849. LECTURES on Medical Missions. Edinburgh: 1849. MERRIMAN on Chloroform in Midwifery. London: 1848. NAVAL Assistant-Surgeons. London: 1849. SCHLEIDEN'S Principles of Botany, translated by LANKESTER. London: 1849.

NOTICES TO CORRESPONDENTS.

Reports of Societies and Academies will, in next Number, be brought up to date.

Contributions sent to us anonymously, are neither inserted, nor acknowledged.

Letters and parcels for the Editors, must be delivered free of every charge, at 28, Upper Gower Street, or 100, St. Martin's Lane, London, or rue de l'Ecole de Médecine, No. 1, Paris; unless in those cases in which a special agreement has been made.

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ORIGINAL COMMUNICATIONS.

THE CLIMACTERIC DISEASE IN WOMEN;

A PAROXYSMAL AFFECTION OCCURRING AT THE DECLINE OF THE CATAMENIA.

By W. TYLER SMITH, M.D. Lond.; Lecturer on Midwifery and the Diseases of Women in the Hunterian School of Medicine.

THE Climacteric Disease has received much attention, since the appearance of the valuable Essay on the subject by Sir Henry Halford, in the fourth volume of the *Transactions* of the College of Physicians. The Climacteric Disorder there described, consists of a sudden decline of the vital or biotic powers in advanced life, and is chiefly met with, in the male sex, from the age of sixty-five and upwards, the female being comparatively exempt from its attacks.

Periodicity is, however, more indelibly marked upon the female than upon the male constitution; and periodic tendencies are as distinctly seen in the diseases, as in the functions, of the female economy. With reference to the sex, the most important climacteric or periodic epoch, is that of the decline of the catamenia. This epoch is generally a time of anxiety, both to patients and professional men; and much care has been bestowed on the study of the access and exacerbations of organic diseases, especially of the uterine system, at this time. Still, it appears to me, *the special disorder* of this period, from which a variety of secondary disorders arise, has never been noticed with sufficient accuracy, either for the purposes of diagnosis or of practice. The Climacteric Disease of this epoch, though of considerable importance, has not been admitted into any nosology.

When we consider the importance of ovulation to the ovaria, and of the catamenial secretion to the uterus, both which functions are carried on in healthy women with unvarying regularity, except during gestation and lactation, for the space of thirty or more years, we cannot wonder that the revolution produced in the economy by their cessation, should be attended by various disordered actions. This death of the reproductive faculty is accompanied, as it were, by struggles, which implicate every organ and every function of the body, but especially the nervous system in all its divisions,—cerebral, spinal, and ganglionic.

This disturbance of the nervous system, though it has escaped methodical observation, takes a certain definite form, without the clear detection of which, its treatment must necessarily be ill-directed and unsatisfactory.

As soon as irregularity in the appearance of the catamenia is observed, certain nervous symptoms, more or less intense, are almost always present. The most common and marked of these are "heats and chills" of the surface of the body; but these heats and chills are not merely disordered sensations,—they are in reality part of a paroxysmal disorder, which a close observation readily makes out. During the whole period of the catamenial decline, whether the process of the arrest of the generative function be spread over a few months, or two or three years, a state of general hyperæsthesia is present. But the paroxysmal disorder I have referred to, is quite distinct from the general hyperæsthetic condition. In the present day, owing to the excessive stimulus of education, the rapid transaction of business, and numerous forms of social excitement, unknown to former times, hyperæsthesia has reached a pitch which has never been hitherto observed. We might, indeed, consider hyperæsthesia as a disease almost as distinct as paralysis of motion and sensation, or spasm. At the catamenial decline, hyperæsthesia is often most distressing.

The simplest form of the paroxysmal attack to which I wish to direct attention, consists of a sudden sensation of cold over the entire surface of the body, which is in a few moments followed by a sense of heat of skin, of an intense character, with the sensation of choking or pharyngismus. These are in turn followed by a cold perspiration, which renders the skin cold and clammy, and sometimes also by a free secretion of urine. At the commencement of the attack, the face is pale, and there is slight head-ache; but when the heat of surface begins, there are flashings before the eyes, ringings in the ears, and frequently nausea, or even vomiting; the face is flushed, there is considerable distention of the veins of the neck and face, and throbbing of the carotids and cerebral arteries. There are, in fact, in many cases, all the symptoms of the *petit mal* in epilepsy. Or the seizure may be compared to a brief ague fit, of which the cold, hot, and sweating stages follow in quick succession. As the condition of the ovaria and the uterus is the cause of this disorder of the nervous system, we might almost be tempted to call it an ovarian or uterine intermittent. The paroxysms are very irregular, and obey no particular times; but they are more frequent at the dates when the catamenia are flowing, either in the scanty or profuse manner so common to the decline of menstruation, or when an ovarian period is passing over, as it frequently does, without any uterine secretion. The brief attack is brought on by taking food or drink, especially stimulating drinks, or by any sudden mental emotion or surprise. The most trivial event, a sudden noise, speaking to a stranger, or waking from sleep, induces an attack. The seizure leaves the patient after a minute or two, bathed in cold perspiration. It is followed also by a sense of great feebleness and languor, much irritability of temper, and some confusion of ideas and memory. Nervous symptoms, during the decline of the catamenia, have often been referred to by writers on the diseases of women, and every practical man must have noticed the heats and chills of this period; but until I did so, no one

had pointed out that these are not vague symptoms, but a succession of definite and peculiar paroxysms.

In the severer paroxysms, all the symptoms I have described are present; and at the height of the attack, there is a brief insensibility or delirium, the paroxysm lasting, altogether, several minutes. The patient sometimes falls down, as if in a slight epileptic or apoplectic seizure. In some of the worst cases I have seen, the attacks have occurred with the greatest violence during sleep, the patient waking in affright at the commencement of the paroxysm. Violent tremors follow, in severe cases, the perspiration in which the attack usually terminates.

As regards the essential nature of these Climacteric Paroxysms, in my work on *Parturition and Obstetrics*, in which I first referred to this affection, I have dwelt at some length on the reciprocal physiological actions which are constantly going on between the ovaria, the mammæ, and the uterus; actions which produce in regular series the successive ovulations occupying the time between puberty and the catamenial decline. When the cessation of the catamenia arrives, the mammæ and the uterus are no longer stimulated by the ovaria to their wonted actions, but the ovaria are not at once reduced to post-menstrual inactivity; before they subside, they produce the uterine disturbance, and the erethism of the nervous system, in which the paroxysmal disorder I have been describing has its rise. Besides the strictly ovarian stimulus to the nervous system, the vascular plethora, resulting from the non-secretion of the catamenia, no doubt increases the nervous excitability; and to this we must probably add the toxæmic effect of retention of the menstrual fluid, as suggested by Dr. Cormack, in his observations on convulsions arising from suppression.[1]

Another very important point, perhaps the most important point, in the pathology of this affection, is the condition of the uterus. At the change of life, this organ is liable to greater congestion than at any other time. This is well known to be the date of the origin of many of the most dangerous and fatal of the structural diseases of the uterus. When there is not irregular menorrhagia, there is constantly recurring uterine congestion, caused by the irregular and inefficient ovarian stimulus. In all cases, in which the paroxysmal disorder is severe, the uterus is found upon examination to be turgid and swollen. In fact, if we refer the general conditions, and the paroxysmal disorder, to any one cause, it must be to the uterine congestion, caused by the special arrest of the ordinary uterine functions, and the irregular ovarian stimulus, which continues, but ineffectually, to goad the uterus to action. This view of the pathology of the affection, leads to the most rational and successful method of treatment. It is curious that some other irritations of the pelvic region will produce paroxysmal attacks similar to ague. This has been frequently noticed in cases of irritation and suppuration in the perinæal region.

Symptoms resembling in many respects those of the Climacteric paroxysm, sometimes occur in nervous patients suffering from suppression of the catamenia, or from suppression alternating with menorrhagia; and particularly in those cases of irregularity of the catamenial function which

[1] London Journal of Medicine, June 1849, p. 531.

occur in widows or in married women living separate from their husbands. But the genuine attack seldom occurs except at the decline of menstruation. Whenever widowhood or separation takes place at the change of life, all the distressing symptoms, and the ovario-uterine excitement, are considerably aggravated.

The proper recognition of this paroxysmal affection of the Climacteric is of great importance in practice. The paroxysm itself forms the basis of many of the severe affections of the nervous system; while the states of the uterus and ovaria, which produce it, give rise in turn to many of the organic diseases which follow the cessation of menstruation. The Climacteric paroxysm is the first distinct step in the nervous pathology of this important period. This affection is intimately connected with Hysteria, Epilepsy, Paralysis, Apoplexy, and even Mania, and may terminate in any one of these maladies. It is only by a due recognition and judicious treatment of the preliminary disorder, that these grave complications can be successfully met or prevented.

I proceed to refer briefly to the most prominent complications arising out of the Climacteric Disease.

Climacteric Hysteria. I have seen the paroxysm pass into a violent hysterical attack, all the visceral spasmodic actions which mark the hysteric fit being present,—such, for instance, as painful and spasmodic action of the cardia, or cardiasmus; painful contractions of the pharynx, or pharyngismus; tenesmus of the rectum and bladder, etc. In hysterical subjects, the disorder is always aggravated by the decline of menstruation; though, after that period has passed, the hysterical tendency diminishes. The Climacteric paroxysm may produce, besides the hysteric fit, a variety of anomalous hysterical symptoms, such as fainting, insensibility, violent weeping, etc.

Climacteric Epilepsy. I have also known the paroxysms of the Climacteric Disease become more and more severe, the insensibility more prolonged, and attended by convulsions, until, in fact, genuine epilepsy has been produced. I have seen several cases of epilepsy in which the disease appeared for the first time during the decline of the catamenia, and grew out of the peculiar paroxysmal disorder I have attempted to describe. The Climacteric paroxysm itself disappears when the constitution is established after the completion of the catamenial change; but unfortunately, when epilepsy becomes grafted upon it, the more serious disease remains after the change of life has passed.

Climacteric Apoplexy. I have known cases in which, during the severe Climacteric paroxysm, the patients have had an attack of hemiplegia or apoplexy. Cases of sudden death, or paralysis occurring at the change of life, are, I have little doubt, to be attributed to these paroxysms. The paroxysm itself produced the cerebral distension, and the danger of this is increased by the greater fulness of the circulation which generally exists at this epoch. In some constitutions, a very slight paroxysmal seizure may produce disastrous results.

Climacteric Mania. Insanity frequently occurs at the change of constitution. I have no doubt that it is often owing to the climacteric paroxysms. Each paroxysm is a distinct shock to the brain, leaving behind it peevishness, irritability of temper, and eccentricity. While writing these pages, I was consulted by a lady, aged 45, who has suffered for two or three years from what women invariably term heats and

chills. Her disposition towards her husband and family has completely altered. She is morose and passionate on the slightest provocation, yet having a full sense of her improper explosions of temper, which at times she deplores most earnestly. Her nervousness is very great; she cannot listen to the same noises, or occupy herself with the same needle-work long together, without a frantic feeling of delirium and loss of self-control. In this case the paroxysmal disorder is the evident cause of her mental distress. When the attack is severe, there is, as I have said, transient delirium at each visitation. When the attacks are frequent, great cerebral irritability is induced, and the patient may become maniacal. In considering the relations of epilepsy, paralysis, apoplexy, and mania, to the Climacteric disorder, we must not judge of the results by the shortness of the Climacteric seizure. We know that in other states of the constitution, a momentary paroxysm of no great severity may produce the most serious cerebral disease.

In a note to his chapter, on the "Disorders attendant on the Decline of Menstruation," Dr. Ashwell refers to the insanity of this period, and his observations are so interesting with reference to this subject, that I quote them entire. He says:—"I have lately attended several cases of decided insanity, consequent on the use of wine and spirits during the period of the catamenial decline. In one, which I saw in consultation with Dr. Holland, when these stimulants had been employed with the hope that they would relieve the languor and depression, the affection assumed all the characters of violent mania, eventually, however, subsiding into what was feared would be incurable madness. Nevertheless, the patient entirely recovered in two years: the efficient remedy being frequent leechings of the cervix uteri, moderate purgatives, nutritious diet with malt liquor and light wines, and extreme tranquillity in the country. In two other but less severe examples, similar means have ended in a cure. I cannot forbear to mention how superior have been, in these cases, the beneficial and almost unvarying immediate good effects of uterine bleeding, over every other kind of depletion."[1]

Now I have no doubt whatever,—and I believe Dr. Ashwell will join with me in the opinion,—that such cases are examples of the affection I have been describing, aggravated by the improper use of stimulating drinks. I have observed, that in the intervals of the slight attacks, there is great mental depression, and a craving for mental and physical stimulus, indulgence in which of course only aggravates the malady. Cases of mania having this origin ought to be placed in a different category from insanity from ordinary causes, as the subjects of it, under judicious treatment, generally recover; and I have no doubt that many such cases might be prevented from proceeding to more serious disease, by the detection and treatment of the Climacteric paroxysm, as the first link in the pathological chain.

The Treatment of the Climacteric Disorder should have reference chiefly to—

I. The Cerebral Symptoms;
II. The Ovario-Uterine Disorder;
III. The General Hyperæsthesia.

[1] Practical Treatise on Diseases Peculiar to Women, by Samuel Ashwell, M.D. p. 202.

I. The Cerebral Symptoms. Our first care should be to prevent the paroxysms as far as possible. The peculiar cerebral attack being brought on or exaggerated, in the special condition of the nervous system at this time, by any local irritation, great attention should be bestowed upon the stomach, bowels, and uterus respectively. In its exaggeration by local causes of irritation, the disorder very closely resembles epilepsy. The diet should be regulated, the bowels kept free from irritation and constipation, and the uterus should be treated after the manner to be referred to, when I come to the special management of this important organ.

All violent mental emotion should be carefully avoided. Great watchfulness should be observed on this point, as in consequence of the condition of the ovaria and the uterus, and the nervous synergies excited by these organs, the mind is excessively prone to irritability. Sources of mental irritation should be prevented as much as possible. Stimulating diet and stimulating drinks should be used only with the utmost caution. At this period, women should be treated with great consideration by those in intimate relation with them. There is no time, not even during pregnancy, when greater mildness and forbearance towards them is necessary. The sexual stimulus should be used with moderation, as either excessive intercourse, or ungratified desires, are equally provocative of the general excitability and the cerebral paroxysms. Many women, during the change of life,—even those of the most irreproachable morals and conduct,—are subject to attacks of ovario-uterine excitement approaching to nymphomania. This is a consideration of the gravest importance; for, without doubt, some of the errors committed by women at this time, are more the result of bodily disease than of moral failing; and, as such, might be prevented by judicious treatment. Every care should be taken to control the mental emotions, and to soothe the physical causes of their excitement. It should ever be borne in mind, that, at this epoch, all the emotions connected with sex are undergoing a great revolution, and that before their subsidence into the calm of post-menstrual life, sudden ebullitions are very prone to occur.

If the cerebral disorder be treated as an independent affection, it will often seem, from its violence, to require active depletory treatment. This would be a mistake, and would be likely to produce great mischief. Patients may be rendered anæmic, without curing the disorder; in fact, it will often increase in severity under active depletion. Still, it becomes necessary in some cases, where the headache is severe, or when the delirium or insensibility are very marked, to apply leeches to the temples, or to employ cupping to the nape of the neck, from time to time. Otherwise, the cerebral congestion, inseparable from the paroxysmal attacks, may produce serious lesions of the nervous centres. The state of the brain should be especially watched during the true catamenial dates, or at those irregular times when there are indications of a catamenial crisis, such as pain in the back, thighs, and hypogastrium, but without the flow of any uterine secretion. It is at these times that the sudden cerebral mischief is most likely to happen.

I do not enter into the treatment of the epileptic, hysteric, paralytic, and apoplectic seizures, which arise out of the Climacteric paroxysm, my present purpose being chiefly to point out the prevention of these serious affections.

Regulation of sleep is of considerable consequence. Early hours and early rising should be recommended. Heavy and prolonged sleep, particularly in the morning, exerts a marked influence in increasing the severity and frequency of the paroxysms. The indisposition to exertion should be conquered as far as possible. At no time of the female constitution is exercise so important as at this. Patients should be as much as possible in the open air. Indeed, in the erethism of the Climacteric, the open air is almost as important as in the *erethismus mercurialis.*

II. The Ovario-Uterine Disorder. The treatment of the ovaria and uterus is the most important point, in the management of the female Climacteric. The cerebral symptoms are only the *results*, while the conditions of the sexual organs are the *causes* of the more remote maladies. Any disorder of the uterus or ovaria, beyond that actually incident to the catamenial change, should be carefully treated. Irritation or abrasion of the os uteri, or displacement of the womb, or congestive enlargement of the organ, increases the severity of the constitutional symptoms. The most natural and effective remedy for all the uterine disturbances of this period, is moderate depletion from the *labia uteri.* The blood may be drawn by incisions into the os uteri, just as in scarification of the gums. I have often used a gum-lancet with great good effect. Or if the depletion be required to be more considerable, three or four leeches should be applied, by the aid of the speculum, to the os uteri. Leeches draw blood more suddenly from the vascular os uteri than from any other part of the body to which they are commonly applied, and often produce prompt and immense relief,—all the relief, in fact, of the catamenial secretion, without any of its inconveniences. The suddenness with which leeches applied to this part fill themselves, considerably increases the good effects of their application, and for some hours after their removal there is an oozing of blood from the leech-bites. Even in cases where hæmorrhagic symptoms accompany the change of life, the application of leeches before the coming on of each uterine flow diminishes the menorrhagia, by diminishing the uterine congestion. Occasional local depletion, besides its importance to the Climacteric Disorder, tends more than anything else which can be devised, to prevent the structural diseases which frequently set in or exacerbate at this epoch. The effects of uterine depletion in mitigating the most distressing head-symptoms, is often almost marvellous. This form of depletion ought to be resorted to from time to time, during the change of life, according to the extent of the uterine congestion, in all women who suffer materially from this alteration of constitution. We often see indications of the treatment which is required in sanguineous effusion from vaginal or rectal varices, or from hæmorrhoidal tumours, or even from the stomach and lungs. It is of course still better if the depletion be made from the uterus itself. The effect of uterine depletion is not confined to the uterus, but extends to the other parts of the sexual system, the Fallopian tubes, the ovaria, and even the mammæ. Occasional uterine depletion appears to me of the first consequence, not only as a method of cure, but as a means of preventing organic disease of the uterine organs, and of those organs affected by the uterine

synergies. Many of these disorders, occurring at the change of life, appear to be aberrations of the formative power which, during the whole reproductive era, has expended itself upon ovulation, gestation, and lactation; but which, being now turned from these physiological processes, takes a pathological direction, and runs into disease. Thus, then, local depletion is of still more importance as a palliative and preventive of uterine and other diseases of this period, than as a means of removing more remote symptoms. In treating diseases of the reproductive organs, the special reproductive power inherent in these organs, and manifested even in their diseases, should never be lost sight of.

The local application of cold is an important auxiliary to depletion, at the female Climacteric. Cold hip baths, or douche baths to the loins, cold water injections into the rectum, the injection of cold water, or iced water, or the introduction of small pieces of ice, into the vagina, are the modes in which cold can best be applied. Injections of any other kind than of simple or iced water, generally produce irritation at this period; and sometimes the vagina is so irritable, that even cold water will not be borne. In cases where occasional returns of the catamenia assume a hæmorrhagic or dysmenorrhagic form, warm and anodyne injections, both into the rectum and vagina, are useful, acting as internal fomentations. Warm water and laudanum, or the infusion of poppy-heads with laudanum added, allay uterine pain and excitement. When menorrhagia with relaxation is the prevailing symptom, strong alum baths,[1] in the intervals between the menstrual discharges, tend to repress the profuse uterine secretion, and to remove the relaxation of the uterine and vaginal tissues.

Care must be taken to avoid rectal irritation, as any excitement of the lower bowel is sure to be participated in by the uterus. The bowels should be kept in a lax state by cooling aperients, or enemata; but drastics, and particularly aloes, should be avoided. The habitual use of aloes, either as a purgative or dinner pill, has seemed to me to increase the uterine disturbance of the change of life, when this period arrives. The management of the bowels at this time is often a difficult matter, as the lower bowel participates in the uterine habit, and is at one time irritable and at another confined. To give aloes as an aperient at this period is mischievous; it is still worse to give it as an emmenagogue. All emmenagogue remedies are as distinctly contra-indicated at this epoch as during pregnancy. They are certain to produce mischief. But although the uterine secretion is not to be stimulated, the other important secretions, — hepatic, renal, alvine, and cutaneous,—ought all to be carefully regulated and kept in full play, to compensate for the important secretion which is about to become extinguished.

III. The General Hyperæsthesia. The hyperæsthesia and the peculiar æsthetic paroxysms, to the study of which it has been my main object to draw attention, without doubt depend upon the erethism or excitability of the nervous system, induced by the irritable condition of

[1] I use the formula recommended by Dr. Ashwell, viz. ℥xvi of alum to each gallon of water; the temperature to be at 98°.

the uterine organs, and upon the partial suppression of the catamenial secretion. All the treatment which has been mentioned contributes to the relief of the hyperæsthetic symptoms. I would, however, insist on the importance of regulating the diet of patients undergoing the catamenial change. From the tendency to plethora and *embonpoint* at this period, a light, nutritious, but not full, diet, with little wine, and no malt liquors, should be prescribed. Owing to the distressing sensations common to this time, small quantities of spirits are sometimes ordered, and are always gladly taken by patients. There is often a diseased craving for stimulants at this time, which, in several instances, I have seen pass into a decided habit of spirit drinking. Spirits ought only to be allowed with the greatest caution at this time of the constitution, as their good effect is only temporary, while their permanent influence is most mischievous. I know of nothing equal to moderate doses of sulphuric ether and valerian, for the relief of the depressing hyperæsthesia, and also of the paroxysms, when these are slight. They often act like a charm in soothing the sensations of the surface of the body; and, given as medicine, they beget no such habit as the permission to take small quantities of spirits frequently does. In the Climacteric state of the female constitution, sulphuric ether is a more decided sedative than either morphia, the preparations of opium, or even hyoscyamus. In the height of the hyperæsthesia, an ether-draught will often procure sleep when the brain refuses to be soothed by narcotics. Throughout the whole period of the change, great attention should be paid to the skin. The clothing should be carefully attended to, and, during winter, flannel jackets and drawers should be worn. Tepid bathing, with subsequent friction, are of great use in diminishing the excessive sensibility of the skin.

The time during which women are subject to the Climacteric paroxysm, and the other affections at the decline of the catamenia, varies in different habits. Some women pass through it in a few months; in others, it extends over three, four, or five years, rendering the patient miserable during the whole time. The great majority of women suffer more or less until the cessation be finally accomplished; but there are a few to whom this time of life is a great blessing, giving them greater strength and comfort than they had ever enjoyed during the childbearing epoch. But these cases are the exceptions.

I have thus attempted briefly to sketch the special paroxysmal affection of the Female Climacteric, and its relation to other disordered conditions incident to the change of life. I am well aware how imperfectly this has been done. Indeed, within the limits of a paper, it would be impossible to do it justice, as the subject is one of sufficient importance to exhaust a treatise. I trust, however, I shall have the satisfaction of directing other observers to a very curious malady, and one which certainly, when I first drew attention to it, had not been distinctly recognized or described.

7, Bolton-street, Piccadilly, June 1849.

ON CERTAIN POINTS IN THE DIAGNOSIS OF THE DISEASES OF THE NERVOUS SYSTEM.

By MARSHALL HALL, M.D., F.R.S.

The Diagnosis of the Disease, in the full sense which I have attached to this term in my *Observations and Suggestions*, Series I, p. 211, is the *first* step which the physician is required to take in his responsible office of the *cure* or care of the sick. Without the Diagnosis, all is darkness. Having first established an accurate Diagnosis, every duty to our patients becomes plain and obvious.

But skill in Diagnosis, in the large sense I attach to this word, implies a sound knowledge of anatomy, physiology, and pathology. All this will be apparent from the following observations, from which it will appear, I think, that however the "practical man"—in other words, the empiric—may exist without a knowledge of physiology, the able diagnostician and physician cannot. Experience, or the habit of visiting the sick, may teach much that it is desirable and even essential to know; but it cannot, without anatomy, physiology, and pathology, or the knowledge of the healthy and morbid actions, enable us to seize each link in the chain of cause and effect in disease, and so "to *know* the disease".

I. Of Hidden Seizures. The first topic which I shall bring before my reader, in illustration of these remarks, is that of *hidden or unobserved seizures.*

I was called, before I had detected the cause of hidden seizures, to a patient affected with protracted delirium, or aberration or confusion of mind, and other symptoms of *arachnitis.* By mild mercurial and aperient remedies, with quiet, a low diet, leeches, a spirit lotion, etc., my patient gradually recovered.

All appeared to be well, when, suddenly, and without assignable cause, except the usual events of business to which he had returned, my patient had a relapse, and now the malady was of tenfold violence: it was furious mania, and long protracted. Again, however, he recovered, though less perfectly.

Again my patient relapsed. But now the malady assumed the form of absence, rather than of excitement of intellect, with imperfect replies to questions, partly from amentia, partly from defective articulation. The case appeared to present the effects of *effusion.* The recovery from this third attack was, however, too prompt and too decisive, to admit of that opinion being retained. I asked the anxious wife of the patient whether there could have been anything resembling a *fit;* and now, for the first time, in answer to this interrogatory, a singular sort of "shuddering", which had occurred immediately previously to this attack, was described.

The patient was slowly but very imperfectly recovering from this third attack, when a decided *epileptic* seizure took place; the eyes, the features, and the head, being convulsively drawn to the right side, followed by augmented symptoms of mental injury, the obvious result of eating too heartily of turbot. In a few days another attack followed, adding

a degree of hemiplegia of the right side of the face and of the right hand to the other symptoms,—a paralysis happily but transient in its duration.

This brief sketch will give a vivid idea of what I mean by the terms "hidden seizures", paroxysmal delirium, paralysis, etc., and spasmo-paralysis.

An epileptoid seizure may take place in the night, at the water-closet, in the city, or elsewhere, unknown to any one. The *effects* of such seizure are referred to other causes,—to other conditions of the nervous centres. The case is called arachnitis, apoplexy, paralysis, mania, etc., according to the prominent symptoms. Who will affirm that he has not made an imperfect diagnosis in such cases? Much careful and thoughtful inquiry, indeed, is required to form a correct opinion. A slight convulsive action, a bitten tongue, an ecchymosed eye-lid, may lead to the detection of a seizure *hidden* hitherto. But before this investigation can be pursued, the mind must be informed and the attention excited. Something slight of this kind may take the speech, the use of the fingers, the vision (in one case, one-half of objects only were seen), etc., for a moment or two, or for a longer time. The affection is, happily, generally transient, as it is paroxysmal. The *seizure* is absolutely *hidden*, except in its *effects*. How much of skilful observation is required before this subject shall be worthily explored!—its hidden character, its paroxysmal form, its form of coma, paralysis, mania, amentia, syncope, sickness, be thoroughly known! This remark leads me to the second topic of this brief practical paper.

II. On the various Forms of Seizures. I had the advantage of attending a most interesting case, four months ago, and again a few days ago, with Mr. Martin, of Grosvenor-street. The former attack was apparently induced by *emotion*. In the latter, no cause could be assigned except the recent keen easterly wind. In it, the head was violently drawn to the right side, the external jugular was distended, the eyes injected and the pupils dilated, and the temporal artery was like a cord, or rather a rope; stupor and hemiplegia were added to these appearances. The right side of the face was slightly agitated by convulsive movements. The next day, a sort of delirium took the place of this stupor. The hemiplegia had (as in the former attack) mostly disappeared; it was paroxysmal and transitory.

It is not my intention to pursue this subject at this time. I must content myself by observing, that the principal *forms* of these seizures are—1, the *Cerebral*; 2, the *Spinal*; 3, the *Cardiac*; 4, the *Stomachic*; that is, inducing cerebral, spinal, cardiac, and stomachic symptoms, variously combined.

Without being unjustly confident in a matter obviously not of a simple character, I would venture to suggest that emotion, or some excitant of reflex actions, is the first cause of these seizures; contractions—morbid and abnormal contraction of the muscles of the neck—an early effect; then compression of the veins in that important region, etc. etc. I propose this subject, as the former one,—as I would every one,—for further and fuller *unbiassed* observation, all *emotion* being excluded. I think, then, that in a certain class of cases, the cerebrum is chiefly affected

with cerebral symptoms; that in another, the spinal centre is chiefly involved with convulsive affections; and that in a third, the medulla oblongata, at the junction of the pneumogastric nerve, is specifically injured with syncope and sickness. This subject for *diagnosis* and for investigation, I commend to the young scientific and physiological physician.

III. On Algo- or Spasmo-Paralysis. It is the object of this part of my paper to call the attention of physicians to the difference between paralysis *with* and *without* pain or spasm, to point out the diagnosis afforded by these facts. But, first, I must speak of the different kinds of pain in these cases. This consists chiefly of the sensation of "pins and needles", as it is termed, and of undue sensitiveness, amounting almost to pain, on touching or gently irritating the cutaneous surface. The *first* diagnosis afforded by the presence of this kind of painful sensation, is that between cerebral and spinal paralysis. In cerebral paralysis, the sensation is generally one of numbness, or of the interposition of some thin substance, as muslin, between the object touched and the fingers. There is rarely any more positive or painful sensation. It is in spinal paralysis that the morbid and painful sensations, which I have described, present themselves. Their absence or presence, therefore, in any given case, is diagnostic of paralysis of cerebral, and paralysis of spinal, origin. But there is a *second* kind of diagnosis afforded by the presence or absence of painful sensations. The presence of such sensations shews, that the lesion of the spinal centre is not complete destruction of its structure, for then sensibility would be annihilated; but that it is rather a state of *irritation* than of destruction,—a diagnosis of the most momentous kind.

What I have said of pain, is still more true in regard to spasm. Spasm never results from lesion of the cerebrum: it implies lesion of the spinal marrow. Spasm is the result of irritation, not of destruction, even of this latter centre of the nervous system. In any case of algo- or of spasmo-paralysis, then, we conclude that it is of spinal, not of cerebral, origin; and that it is irritation or erethism, not destruction or catalysis, of the spinal centre. Indeed it may be observed, in general, that affection of the cerebrum can only give rise to affection of the cerebral functions, as undue excitement of the spinal senses, of the perceptions, of the imagination, etc., or to diminution or abolition of these functions. *Pain and spasm belong to other systems.*

In my examination of patients, I frequently ask—"Have you the sensation of 'pins and needles'?—have you any cramp or spasm?" And I find the replies greatly to *prompt* the diagnosis—the diagnosis between irritation and destructive lesion, between arachnitis and myelitis. I leave these *suggestions*, for such alone they are, to the careful consideration of my readers.

IV. The Seat of Paraplegia. In Paraplegia, the first questions, after those relating to pain and spasm, are—Is there reflex action on applying an excitant, as heat, or cold, or tickling, to the foot or feet, or to the higher parts of the cutaneous surface?—and, how *high* does the point of excitability extend?

By these inquiries we learn, whether a portion of the spinal marrow remain intact below the seat of the disease or lesion; and by bearing in mind the oblique mode in which the spinal nerves leave the spinal marrow and canal, we learn the seat of this lesion still more accurately. In the absence of reflex actions, we learn the seat of lesion by ascertaining how *low* the loss of sensation extends. By ascertaining the existence of reflex actions, on one hand, and the downward extent and boundary of sensation on the other, the anatomist and the physiologist may form a very accurate diagnosis of the seat and limitation of the lesion. Nay, I have a case of no ordinary kind and interest under my care at the present time—for the opportunity of witnessing which I am indebted to Mr. Humby, of St. John's Wood—in which the disease is (probably) limited to arachnitis over the anterior part of the vertebræ, on which the brachial plexus takes its origin; for the case is one of spasmo-paralysis, limited to the muscles of the two hands and arms! I intend to give the case with all its details shortly; meantime I will merely mention, that a ptosis of the right eye-lid, and imperfect motion of the right eye outwards, have already ceased under a mild mercurial treatment, and the arms are rather more under command. The arachnitis had probably extended to the base of the brain. In the neck, the vertebræ project a little, giving the appearance of roundness, and throwing the chin upon the sternum, an effect also somewhat lessened. The case is probably one of syphilitic affection of the cervical vertebræ. At any rate, the light thrown upon the diagnosis by our anatomy and physiology, the only sources of knowledge we possess in such a case, is most interesting and most valuable.

V. On "the Nervous Circle" of Sir Charles Bell. There is a class of phenomena in some cases of paralysis, which, I think, throw a ray of light on the phenomenon which Sir Charles Bell has designated "*the Nervous Circle*", and defined thus:—"Between the brain and the muscle there is a circle of nerves: one nerve conveys the influence of the brain to the muscle, another gives the sense of the condition of the muscle to the brain." I think this view an error. I believe we have no consciousness of the condition of individual muscles, or sets of muscles, as we have no power of acting on such muscles. The sense, sometimes denominated the muscular sense, is, I believe, not in the muscle, or in any sentient muscular nerve, but in the nerve of touch, or of vision; and volition is not directed to any muscle, or set of muscles, but to the aim, object, and purpose of their contraction. We are guided in our voluntary actions, not by muscular sense or nerve, but by the sense of touch or of vision, by the *cutaneous* or the *optic* nerves. If there be loss of sensation in the fingers, the patient lets any object held by them escape and fall, unless the eye be continually directed towards them, to regulate the force of muscular contraction. If a patient have lost the power of sensation in the feet, he cannot walk in the dark; the eye is essential to the due action of the muscles of the lower extremities. I have a patient afflicted with partial paraplegia, who has no power of *balancing* himself without the aid of the eye. We have only to consult our own consciousness to be aware that "the nervous circle" is not between muscle and muscle, but between one sentient nerve, whether

of touch or of sight, and another. The sensation does not ascend from the muscle, nor does volition descend to it; but the former arises from a nerve of sense—of special sense—and the last is directed to an aim or purpose, in attaining which the former is the *guide*.

This short disquisition—and I intend to treat the subject more at length hereafter—has rather arisen out of the study of the *diagnosis* of diseases of the nervous system, than afforded a means of such diagnosis. Still, I believe, that real and sound physiological views always find their application in practice, sooner or later; and I have therefore thought it right to notice this amongst the "Certain Points in the Diagnosis of the Diseases of the Nervous System", which I proposed to myself as the object of this communication. The purpose of my life of labours is, if possible, to raise Medicine to the rank of Surgery, to exchange its empirical condition to that of science—its own science—Physiology, and to exclude the mere quackeries, whether in the profession or out of it. I shall conclude by a brief notice of—

VI. Pain along the Spine. Much has been said on the subject of "Spinal irritation", and of the presence of tenderness along the spine. If there be inflammation or disease of the vertebræ, their ligaments, etc., it is plain that pressure will induce pain. But the anatomist sees at once that no pressure on the spinous or adjacent tissues can occasion pain, where the malady is seated *within* the spinal canal. Besides, the pain now in question is one, if it really exist at all, of mere hyperæsthesia of the *cutaneous nerves*, generally mere hysteria. And although hysteria is *real* enough, as we see in hysteric palpitation of the heart, yet it must be viewed as *sui generis*, and be treated wisely, and not as we would treat organic lesion. Scarcely do percussion, or the application of a sponge, taken out of hot water, along the spine, afford us more definite results. The diagnosis in this class of diseases is, in fact, the result of an enlightened and enlightening *anatomy* and *physiology*. The diagnosis of the Diseases of the Nervous System must rise out of the diagnosis of its functions, and I may with great truth and justice repeat, that the detection of the *Reflex Spinal System*, and its distinction from the cerebral and the ganglionic, constitute the basis of all further progress in this department of our science.

Long ago, and on many occasions, I had set forth the *idea*—and much more than the idea—and in the idea is the *discovery*,—that the science of obstetrics is a branch of that of the reflex spinal system; and Dr. W. Tyler Smith has recently accomplished (as, I believe, no one else could have done), what I had suggested, in the following words:—"The whole question of abortion and parturition, and, in a word, of *Obstetrics*, as a science, is one of the true spinal system; and he will do humanity great service who, with suitable opportunities, will trace it fully."[1] We know that the mamma is an excitor of uterine action, whilst the ovarium presides over other parts of the generative functions. If Dr. Tyler Smith shall *prove* that the ovarium is the excitor of parturition, which appears so probable, I shall consider that proof a brilliant *discovery*.

14, Manchester-square, June 1849.

[1] On Diseases of the Nervous System, p. 341, § 1711.

LAST ILLNESS AND POST-MORTEM EXAMINATION OF SAMUEL JOHNSON, THE LEXICOGRAPHER AND MORALIST, WITH REMARKS.

By GEORGE JAMES SQUIBB, Esq., Member of the Royal College of Surgeons of England.

[*Read before the Harveian Society.*]

In the following paper, I propose to give a succinct account of the maladies under which Dr. Samuel Johnson, the great lexicographer and moralist, suffered, and to notice their influence upon his character and disposition. I shall, as far as possible, allow Johnson to speak for himself. To this, I shall append the very interesting post-mortem examination,[1] and a few practical remarks, in reference to the disease and its treatment.

Dr. Johnson, the subject of the following paper, was more or less a sufferer from his earliest childhood; having had the misfortune to be afflicted with *Scrofula* from his infancy, to such an extent, indeed, as to seriously affect the sight of one eye. He had, he fancied, contracted this malady from a diseased nurse; and it tended greatly to embitter the remainder of his life, and was probably the secret cause of that irascibility of temper by which he was so frequently disturbed. Unfortunately, also, at this time, Dr. Swinfen, the physician whom he consulted, imprudently expressed to him his opinion, that the "vile melancholy" which affected him so early in life, would probably terminate in insanity.

After struggling with this strumous disease, both mentally and physically, in his early manhood, he came to London in 1737, being then in the twenty-ninth year of his age. At this time his pecuniary resources were very limited, and his necessities consequently most urgent; he also suffered severely from an attack of dyspepsia, produced most likely from the want of regular and proper nutriment, coupled with the depressing influences attendant upon his sad condition. It is about this period that we find him signing himself "Impransus", in a letter to Cave; and upon one occasion, he and his friend Savage, not being able to raise the means to obtain their usual dinner in "Porridge Island", were content to inhale the fumes of pea-soup and boiled beef, for which that vicinity was then so celebrated; and probably those strange gesticulations, with which at this time he was so much affected, and which continued in after life, were, in fact, a species of *Chorea Sancti Viti*, or St. Vitus's Dance, induced by nervous irritability, the result of debility; for Johnson was of large stature, and always an immense eater. It is not the object of this paper to enter into details respecting the various literary struggles and undertakings, which occupied so much of Johnson's time and attention at this period of his history, further than to revert to such particulars as may have a bearing upon his case in a medical point of view. It will be necessary, therefore, to state, that in the year 1747, when about forty, and at the period he was engaged upon his great work, *The Dictionary*, he suffered acutely from an attack of his hypochondriacal disorder, and was found, during one of those fits, by Dr. Adams, in a most deplorable state of

[1] By the kind permission and liberality of Dr. Wilson.

despondency and depression—groaning and talking to himself, or restlessly walking the room:—and on that occasion he expressed his willingness to have a limb amputated to recover his spirits.

It has been well observed that Johnson's disorder had three distinct characters. At the age of twenty, the despondency which affected him amounted to hypochondriasis, and to his general irritability and fretfulness of disposition were added great dejection of spirits, to such an extent as to render his existence almost intolerable. At this early period, it is related by Boswell, he felt so languid and inefficient, as to be scarcely able to distinguish the hour by the town clock.

About the age of forty-five, when engaged in finishing his admirable preface to his great work, *The Dictionary*, his melancholy had attained its height or meridian, alternating with those paroxysms of irritability of temper, and, I may add, of arrogance and impatience of control, that so frequently distressed himself and his friends. From this morbid melancholy, however, he never perfectly recovered.

Johnson's health began to decline about the year 1766, and his end was, no doubt, accelerated by his mode of living, his habits being anything but conducive to health. At this time he was a late riser, a large eater, indolent and inactive; he occasionally ate voraciously, and maintained that "one unmindful of his belly, was likely to be unmindful of everything else"; he also at times drank freely of port wine, and was, as is well known, in the habit of taking immense quantities of tea. Habits like these, which his powerful and generally robust frame had enabled him to withstand with impunity, began, about fifteen years before his death, to seriously affect his constitution, producing at this time much general debility, and in 1777 commenced that series of illnesses which ultimately proved fatal, and to which I intend more particularly to direct attention. At this period he appears to have had an attack of the epidemic then raging, probably influenza, which terminated in asthma; but here I must allow him to speak for himself.

DR. JOHNSON TO MRS. THRALE.

Wednesday, Jan. 15, 1777. (One in the morning.)

"*Omnium rerum vicissitudo.* The night after last Thursday was so bad, that I took ipecacuanha the next day. The next night was no better. On Saturday I dined with Sir Joshua. The night was such as to oblige me to rise, and pass some hours in a chair, with great labour of respiration. I found it now time to do something; and went to Dr. Lawrence, and told him I would do what he should order without reading the prescription. He sent for a chirurgeon, who took about twelve ounces of blood; and in the afternoon I got sleep in a chair.

"At night, when I came to lie down, after trial of an hour or two, I found sleep impracticable; and therefore did what the doctor permitted in a case of distress: I rose, and opening the orifice, let out about ten ounces more. Frank and I were but awkward; but, with Mr. Levett's help, we stopped the stream, and I lay down again, though to little purpose,—the difficulty of breathing allowed no rest. I slept again in the day-time, in an erect posture. The doctor has ordered me a second bleeding, which, I hope, will set my breath at liberty. Last night I could lie but little at a time.

"Yet I do not make it a matter of much form. I was to-day at Mrs.

Gardner's. When I have bled to morrow, I will not give up Langton nor Paradise; but I beg that you will fetch me away on Friday. I do not know but clearer air may do me good; but whether the air be clear or dark, let me come to you. I am, etc.

"To sleep, or not to sleep."

It appears that he was repeatedly bled, although he had himself a natural aversion to it; and the voluntary bleeding to which he subjected himself, as before stated, was evidently the result of great confidence in his medical advisers. On one occasion, when speaking of it, he said: "*I shall try to escape another bleeding; for I am of the chemical sect, who hold phlebotomy in abhorrence.*" In the course of this attack alone, he had lost nearly forty ounces of blood; and the propriety of this excessive bleeding, at his age, for a spasmodic disorder that was afterwards relieved by opium, is very questionable: indeed, it can scarcely be doubted, that the dropsy and palsy, which subsequently ensued, were the effects of the debility produced by so great a loss of blood. In fact, as Dr. Madden truly observes, "the diseases of old men, whose vital energies have been expended in literary pursuits, are seldom to be remedied by the lancet."

At this period Johnson continued to suffer much from dyspnœa, for which he had recourse to large doses of ipecacuanha. He thus speaks of its uncertain effects in a letter to Mrs. Thrale.

"Lichfield, August 23, 1777.

"I have been trying a great experiment with ipecacuanha, which Akenside had inclined me to consider as a remedy for all constrictions of the breast. Lawrence, indeed, told me that he did not credit him; and no credit can I find him to deserve. One night I thought myself the better for it; but there is no certainty. On Wednesday night, I took ten grains: the night was again restless. On Thursday morning, I took ten grains: the night was again restless. On Friday night, I took twenty grains, which Akenside mentions as the utmost that, on those occasions, he has ventured to give: the night was, perhaps, rather worse. I shall therefore take truce with ipecacuanha."

Subsequently he took squills, etc. [Letter, March 18, 1782.] In 1783, a severe cause of anxiety increased Johnson's previous ill-health. It appears that he had, as already observed, been accustomed to be bled frequently for his attacks of asthma; but latterly, by the advice of Dr. Pepys, who had perceived that the legs had become œdematous, he had discontinued it; substituting opium in doses of from two to three grains during the day, or at bed-time. The day previous to the attack I am about to speak of, he had felt better than usual; and had even sat for his portrait, and walked a considerable distance without inconvenience. At night, however, having retired to rest for some time, he awoke; and upon sitting up, as was his custom, he was seized with a confusion in his head, and vertigo. This alarmed him; and anxious to know, from the natural dread which he always had lest his intellect should become affected, whether his faculties were really impaired, he composed, at the instant, a prayer in Latin, which satisfied him that his mind was perfect. Soon after, however, upon making an attempt to articulate, he found his

speech fail him, which, coupled with other circumstances, apprized him that he had been struck with paralysis. He then had recourse to wine; for the purpose, as he states, of "rousing the vocal organs." This failing to produce the desired effect, as might have been expected, he again lay down in his bed, and fell asleep. On his awaking, he wrote the following note to Mr. Allen, his immediate neighbour, but with much difficulty, as he states that he could not help making wrong letters; and the original note here alluded to, which I have seen, bears evident traces of the unsteadiness of his hand on that occasion. He had, previous to this, written some directions for his servant, who, upon entering as usual in the morning, to call his master, was naturally alarmed at not being able to understand him. This is the note to Mr. Allen.

"It has pleased Almighty God to deprive me of speech during the night. Come to me directly, and be about me as much as possible. Tell Mrs. Williams to shut out all company."

His physicians, Drs. Heberden[1] and Brocklesby, with Mr. Holder, his apothecary (and usual medical attendant after the death of Mr. Levett), were with him early in the morning; and from the remedies employed, they appear on this occasion to have treated his case both vigorously and judiciously, feeling probably, that the attack had been somewhat accelerated, if not caused, by the previous depletions to which their patient had been subjected. They prescribed ammonia, blisters behind the ears, and subsequently a large one over the head, and ordered nutritive diet, with wine. Under this treatment Johnson continued to gain strength, and ultimately recovered from the effects of his attack of paralysis. In a letter, dated June 23rd, 1783, he says: "I thank God, that less and less is suffered every day; and the physicians seem to think that little more need be done." After his recovery, he went for a short time to his native town (Lichfield), and on his return was engaged in some literary pursuits. Johnson survived this attack of paralysis a year and a half; but a complication of disorders had now set in, which rendered his life miserable: gout, asthma, and dropsy harassed and distressed him, in addition to which he had occasion to consult Mr. Potts about a sarcocele, under which he had long laboured.

We are now approaching the last year of Johnson's existence. In November, 1783, his spasmodic asthma returned with redoubled violence; but unwilling to have recourse again to the large doses of opium from which he had previously found relief, he now took *diascordium*,[2] a preparation of the herb "germander," with the syrup of poppies; for a dose he took a quarter of an ounce of diascordium, which he states was considered equivalent to about half a grain of opium. The asthma, however, increased; and to such a degree, that he could no longer endure the

[1] By the kind permission of Dr. Paris, the President of the Royal College of Physicians, I have been allowed access to Dr. Heberden's Case Book, preserved in the library of the College, and there, under this date, I find what I cannot but presume to be Johnson's case; I say presume, as Dr. Heberden does not give the name of his patients, but numbers, thus: "6335. Paralytica. Vocis amissio et memoriæ labefactio cum sensuum confusione perstant perdies." The treatment, including the following draught, is excellent:—"℞ Carb. aromat. ʒss; vini aloes, ʒii; sp. tenuior: (brandy), ʒii; aq. distill. ʒvi; ol. cinnam. gr. i. Fiat haustus, 6tâ quâque horâ sumendâ. Vesicatorium.

[2] There are two formulæ in the Pharmacopœia of the period (1783) for preparing Diascordium.

recumbent position, and was consequently obliged to sit up during the greater portion of the night. Probably, as "Boswell" suggests, the very severe winter of 1783-4, greatly aggravated his sufferings. At this time also came on the oppressive, and subsequently fatal, disease of dropsy, which again obliged him to have recourse, and with more frequency, to the use of opium, with which he also took large doses of squills; and, according to the advice of Sir Richard Jebb, he endeavoured "to strengthen the constitution by the bark, tame the cough by opium, keep the body open, and support himself by liberal nutriment."

In February, 1784, he experienced a marked and sudden remission of his symptoms, by voiding TWENTY PINTS of water. The day previous was passed by him in perfect abstraction from all society and worldly concerns, having desired his servant Frank to exclude all company, and to say that "his master was preparing himself to die." During the night, he gradually but successively passed the quantity of fluid, twenty pints, as I have before stated, with, as may be supposed, marked benefit and relief. This alleviation, however, continued but for a short time, as is evidenced by the following copy of a letter, for which I am indebted to the family of the late Dr. Heberden.

DR. JOHNSON TO DR. HEBERDEN.

"Bolt Court, Fleet Street, February, 1784.

"Dear sir,—When you favoured me with your last visit, you left me full of cheerfulness and hope. But my distemper prevails, and my hopes sink, and dejection oppresses me. I entreat you to come again to me, and tell me if any hope of amendment remains, and by what medicines or method it may be prevented. Let me see you, dear sir, as soon as you can. I am, sir, your most obliged and humble servant,

SAMUEL JOHNSON."

In a letter also to his friend Boswell, in the ensuing March, he desires him to write to Dr. Cullen, for his and others' opinion upon his case. This occasioned the following letter from Boswell, to Drs. Cullen, Hope, and Monro.

"March 7th, 1784.

"Dear sir,—Dr. Johnson has been very ill for some time, and in a letter of anxious apprehension he writes to me, 'Ask your physicians about my case'.

"This you see is not authority for a regular consultation; but I have no doubt of your readiness to give your advice to a man so eminent, and who, in his *Life of Garth* has paid your profession a just and elegant compliment: 'I believe every man has found in physicians, great liberality and dignity of sentiment, very prompt effusions of beneficence, and willingness to exert a lucrative art where there is no hope of lucre'.

"Dr. Johnson is aged 74. Last summer, he had a stroke of the palsy, from which he recovered almost entirely. He had before that been troubled with a catarrhous cough. This winter, he was seized with a spasmodic asthma, by which he has been confined to his house for about three months. Dr. Brocklesby writes to me, that upon the least admission of cold, there is such a constriction upon his breast, that he cannot lie down on his bed, but is obliged to sit up all night, and gets rest, and sometimes sleep, only by means of laudanum and syrup of

poppies; and that there are œdematous tumours in his legs and thighs. Dr. Brocklesby trusts a good deal to mild weather. Dr. Johnson says that a dropsy gains ground upon him; and he seems to think that a warmer climate would do him good. I understand that he is now rather better, and is using vinegar of squills. I am, etc., JAMES BOSWELL."

"Dr. Hope corresponded with his friend, Dr. Brocklesby. Drs. Cullen and Munro wrote their opinions and prescriptions to me, which I afterwards carried to London, and so far as they were encouraging, communicated to Johnson."

In May, however, he rallied sufficiently to enable him to again dine out with his friends, and in June he went to Oxford, and subsequently on a visit to his friend Dr. Taylor at Ashbourne. About November, he returned to London, at which time both the asthma and dropsy became more violent and distressing. It was now evident to those around him, that his condition was one of imminent danger. On the 30th of November a consultation of his physicians was held, at which Johnson proposed that his legs should be scarified, but his medical attendants opposing it, he gave in, although, as he said, he was not satisfied.

He rather rallied till the 8th of December, when at his renewed and urgent desire his legs were scarified by Mr. Cruikshank, to whom he said: "*Cut deeper; you are afraid of giving me pain, whilst I am anxious for life.*"

He now asked Dr. Brocklesby for his candid opinion of his case, and upon his giving him an unfavourable one, Dr. Johnson observed that from henceforth he would take no more medicine, a resolution he adhered to for the remainder of his life. On the 13th of December, he desired his servant to give him a case of lancets that he had in a drawer in his room, which was handed to him: upon those present observing the bed clothes move, they suspected his intention of puncturing his legs, and at once arrested his hand, but not in time to prevent him accomplishing his object; for upon turning down the bed clothes, they found an effusion of blood, caused by a deep incision which he had made in the calf of one of his œdematous legs. The loss of blood consequent upon this act, in his debilitated state, produced excessive exhaustion; stupor supervened, and at seven o'clock in the evening of that day, without a struggle, expired the great Samuel Johnson.

POST-MORTEM EXAMINATION:—Extracted from the MS. folio of "Dissections," by the late James Wilson, Lecturer on Anatomy in the Hunterian School of Medicine, Great Windmill Street.

"Wednesday, Dec. 15th, 1784, opened the body of Dr. Samuel Johnson for Mr. Cruikshank, in the presence of Drs. Heberden, Brocklesby, Butler, Mr. C., and Mr. White. He died on the Monday evening preceding. About a week before his death, Mr. C., by desire of his physicians, scarified his legs and scrotum, to let out the water which was collected in the cellular membrane of those parts, Dr. Johnson being very impatient to have the waters entirely gone. On the morning of the day on which he died, he repeated the operation himself, and cutting very deep, lost about ten ounces of blood; he used a lancet for this purpose; he was in too weak a state to survive such an apparently

trifling loss. For several years past, he had been troubled with asthma, for which he commonly used to take opium, and found that nothing else was of any service to him; he had discontinued this practice, however, some years before he died.

"On opening into the cavity of the chest, the lungs did not collapse as they usually do when air is admitted, but remained distended, as if they had lost the power of contraction; the air cells on the surface of the lungs were also very much enlarged;[1] the right lobe adhered very strongly to the diaphragm; the internal surface of the trachea was somewhat inflamed; no water was found in the cavity of the thorax. The heart was exceedingly large and strong; the valves of the aorta were beginning to ossify; no more fluid than common was contained in the pericardium. In the abdomen seemed to be incipient peritoneal inflammation and ascites; the liver and spleen were firm and hard; the spleen had almost the feel of cartilage. A gall-stone, about the size of a pigeon's head, was taken out of the gall bladder; the omentum was exceedingly fat; nothing remarkable was found in the stomach; the folds of jejunum adhered in several places to one another; there was also a strong adhesion by a long slip between the colon and bladder; the pancreas was remarkably enlarged; the kidney of the left side tolerably good, some hydatids beginning to form on its surface; that of the right side was almost entirely destroyed, and two very large hydatids formed in its place. Dr. Johnson never complained of any pain in this part; the left testicle was perfectly sound in structure, but had also a number of hydatids formed on its surface, containing a fatty gelatinous fluid; the right testicle had hydatids likewise, but the spermatic vein belonging to it was exceedingly enlarged and varicose. The cranium was not opened.

"N.B. Mr. White, assisting me to sew up the body, pricked his finger with the needle; the next morning he had red lines running up the arm, and a slight attack of fever."

Remarks. There are several points of practical interest in Dr. Johnson's case. The emphysematous state of the lungs had been considered to be "asthma." Emphysema, it must be remembered, was not understood as a distinct disease before Laennec's time. In Johnson's case, we perceive how the morbid change becomes proportioned to the age of the patient, as paroxysms become severer, more frequent, and more trying. In his case, probably, the emphysema added to the hypertrophy of the heart. The influence of the emphysematous lung upon the heart, is perceived in that œdematous state of the lower extremities, to which Johnson was subject.

Upon a review, therefore, of Johnson's case, we find it strongly confirmatory of the influence of disease upon the genius and temperament of the individual. We find him *inheriting* a strumous disorder, although Johnson was disposed to attribute it to having *imbibed* the poison from

[1] Dr. Latham, sen., averred that the plate of *emphysema* of the lungs in *Baillie's Morbid Anatomy*, was taken from the lungs of Dr. Johnson. I am informed also, that the right kidney is still in the possession of a descendant of the Mr. (subsequently Dr.) White here mentioned.

a diseased nurse. At twenty he was attacked with the "vile melancholy,"—a hypochondriasis attributable, I am induced to believe, to an anæmic state of the blood, and which so much embittered his future life. Most fortunately for himself and mankind, bitter poverty, which certainly, in some degree, aggravated the disease by imperfect nutriment and probably a confined atmosphere, obliged him to make those efforts so important in the combating this sad disorder; for, as the poet truly observes,—

"Hurl but a stone, the giant dies."

It was therefore to the corporeal condition of Johnson, and to the train of thinking more immediately produced by that condition, that we are so much indebted. It has been well observed by my friend Dr. Miller: "Much has been said about the mind of Johnson modifying and influencing his bodily sufferings and the disease itself; but it would be an interesting inquiry, to examine, how far the corporeal condition tended to determine his character, and keep him continuously in one train of thinking." His mind, tinctured by morbid feelings even from earliest childhood, was of the most imaginative cast, and had it not indeed been for the consciousness of a bodily infirmity which continually possessed him, his mind might not have had that bias which led to such deep powers of reflection and a knowledge of moralities. Had he been blessed, therefore, with the "mens sana in corpore sano", he might only have been known to us as the poet, dramatist, and historian (and not moralist). Fortunately, I again repeat, Johnson was obliged to make those powerful efforts which produced the inimitable *Rasselas* in one week, and forty-eight printed octavo pages of his *Life of Savage* at one continuous sitting; and these exertions, combined with his love of society and the excitement produced by the animated conversations of the "Club", and the literary circle that surrounded him, were, I am convinced, the safeguard that prevented that morbid irritability and despondency becoming positive insanity. Johnson well knew his own feeling when he exclaimed, "Poor dear Collins" (who was then insane), "I have often been in his state, and therefore have it in great commiseration." It was this condition of body, that produced also that religious gloom and despondency and fear of death, that so strongly marked the character of "the great moralist." He felt the beauty of religion, and never ceased to desire the possession of it; but the same temperament, to which we have alluded, tinged his views upon this all-important subject. To many, in this respect, Johnson's character is mysterious; but if we take the view I have alluded to into consideration, all then becomes clear. I consider that there may be another cause of Johnson's morose disposition, more especially in the latter portion of his life; I mean what was presumed to be spasmodic asthma, but which I am inclined to think, from the post-mortem examination, was emphysema of the lungs. From the imperfect oxygenation of the vital fluid, "black blood" circulated through the brain, and hence arose nervous depression, gloomy thoughts, and deep despondency. It is evident that Johnson's physicians, in the earlier part of his life, did not treat his disorder judiciously. Swinfen, by his unfortunate remark "that it would probably terminate in madness", made an impression upon Johnson's mind that was never perfectly effaced: his intimate friend and medical adviser, upon

his coming to London—the excellent and good Dr. Lawrence—although the accomplished scholar and delightful companion, was not the practical physician, and had not much control over his rather unruly patient. We all recollect the "amusing scene", as Mrs. Thrale terms it. The patient belaboured the physician: and Johnson promises, in the letter already quoted, to abide by Lawrence's directions, and not read the prescriptions. Lawrence bled him, I cannot but think, too freely, and this increased the very malady which he was most desirous to cure. Fortunately, Johnson afterwards became acquainted with and took advantage of the kindness and decision of Brocklesby, the practical knowledge of Jebb, and the judicious treatment of Heberden, of all of whom, upon every occasion, their illustrious patient spoke in terms of high regard: and who had the happiness and satisfaction of assuaging the sufferings, and prolonging the life, of Samuel Johnson.

6, Orchard-street, June 1849.

ON THE REMOVAL OF OSSEOUS CATARACTS.

By W. WHITE COOPER, Esq., F.R.C.S. Eng., Senior Surgeon to the North London Infirmary for Diseases of the Eye.

THERE is a morbid change of the crystalline lens and its capsule, not very uncommon in persons of gouty and rheumatic constitutions, and which is also occasionally, though rarely, the result of injury. It is remarkable for the great suffering it causes, which can only be alleviated by the removal of the irritating body. The operation, however, is attended with more difficulty than might be expected from the notices in most ophthalmic works; as will be seen by the following cases.

CASE 1. Mrs. Peters, aged 60, placed herself under my care on the 9th September, 1846. She stated, that two years previously, whilst attended by a physician for derangement of the general health, she was attacked with spectra, resembling black feathers waving before her left eye. This gradually increased; and at the expiration of six weeks she was seized with violent pain in the right eye, and almost immediate extinction of sight. She placed herself under the care of an eminent oculist, who depleted her largely and administered mercury freely, but without affording the least relief. She was then for some time under the care of Dr. Turnbull, without benefit. On examining the right eye, a yellow, apparently Osseous Cataract was visible, pushing forward the iris, and almost obliterating the anterior chamber. It was adherent to the margin of the pupil, though to what extent could not be ascertained, as atropine failed to produce the slightest dilatation. The iris had lost its brilliancy, and was of a dull olive-green colour; the globe was diminished in size, felt soft and boggy, and dark tortuous vessels were visible on the surface. There was not the slightest perception of light. The patient complained of agonizing pain in the eye, and a sensation as if something moved in it. At times, the suffering was so severe as to be scarcely bearable. The left eye presented appearances indicative of general chronic inflammation. The iris dull and discoloured; the pupil motionless; lens muddy and

of a greenish yellow; sclerotic slate-coloured, and marked with many tortuous purple vessels. There was pain in this eye, frequently severe, and on both sides over the brows, and down the sides of the nose. Although generally totally blind, she fancied that at times she had some vision with the left eye. There was great general debility, for which gentian and ammonia, followed by bark and soda, were prescribed with considerable advantage; and on the 12th November she was in a condition to bear the operation of removal of the lens, which was clearly the main cause of her suffering from the right eye. I succeeded in passing my knife across the cornea, but, in completing the section, found it unusually tough; on applying the sharp curette, no impression could be made on the lens, which was like a piece of stone. The adhesions were then freely divided, and another effort made to press out the lens, but without avail, for the iris was absolutely rigid, and did not yield in the slightest degree. An incision was therefore made in the margin of the pupil and the Cataract attempted to be seized with a hook, but without success. At length, by means of a pair of fine forceps, a portion was broken off, and I succeeded in removing the whole without any escape of vitreous humour. The Cataract consisted of a firm shell of bone, containing soft glutinous matter, like a mixture of gum and chalk. The flap having been replaced, cold wet rags were applied, the patient put to bed, and a full opiate administered.

I was agreeably surprised at finding that not the slightest unpleasant symptom followed this severe operation; the wound healed with rapidity, and at no time was there more inflammation than was necessary for the perfection of the union of the divided parts.

Case II. John Richardson, aged 64, had been subject to deep-seated pain in the right eye, muscæ, scintillations, and supra-orbital pain, for fourteen years: he was of a family in which gout was hereditary, and had suffered from it himself for many years. He had been leeched and blistered for the eye; but residing in rather a remote spot in the Fens of Lincolnshire, it would seem that his case had not received the attention its serious nature required. In about twelve months from the first attack, he became perfectly blind of that eye, and had since suffered almost constant pain, so excruciating at times as to be scarcely bearable. His health had become greatly impaired, and the sight of the left eye was failing.

I saw him first in April 1845. He was pale, haggard, and emaciated. The right eye was somewhat atrophied; the sclerotic, of a dark grey colour, was traversed by numerous tortuous violet-coloured vessels; a dusky red zone surrounded the iris, which was of a dull, greenish hue, and convex in form, obliterating the anterior chamber. The pupil was elliptical from above downwards, apparently dragged into that form by the weight of a Cataract, which was obviously pressing against it. This was partially separated from its attachments, so that it had sunk down, leaving a clear space in the upper fourth of the pupil. The Cataract presented the characteristics of an osseous change. The left eye was somewhat congested, and bore evidence of long-continued sympathetic irritation.

After having tried palliative treatment for a month, without benefit, I proceeded to remove the right lens on the 12th of June. The obliteration of the anterior chamber rendered it impossible to pass the knife

across it; I therefore made an oblique incision, from above downwards, in the lower half of the outer margin of the cornea, and extended it by a curved knife. Then, introducing the sharp curette, I proceeded to break up the Cataract. It was with great difficulty, and after many attempts, that I accomplished this; and it was necessary to divide several adhesions which had formed between the Cataract and the inner margin of the pupil. These difficulties prolonged the operation. With care, however, the whole of the fragments were cleared away, and the flap replaced: the eye was closed; cold, wet compresses were applied; the patient was put to bed, and forty drops of tinct. hyoscyami administered. The patient passed a good night; and when, on the fourth day, the eye was examined, the wound had united. The case proceeded in the most satisfactory manner; and the object of the operation was perfectly attained. Relieved from such a source of suffering, the patient rapidly improved in health and flesh.

Case III. Samuel Doyle, aged 54, became a patient of mine at the North London Eye Infirmary, on the 16th October, 1847. He had passed the greater part of his life in the army, had been much in the tropics, and had undergone a full share of the hardships of a soldier's life. For many years he had suffered from rheumatism, and his left eye had been attacked on three occasions with inflammation. After the second attack, the sight became considerably impaired; and he was rendered blind by the third, which was the most severe, and took place in 1830. From this time, the eye was a constant source of torment; the slightest local irritation, or an east wind, brought on inflammation and acute pains, extending over the side of the head, forehead, and down the nose. The pain was at all times increased by stooping.

The eye presented all the appearance of long continued disease. The sclerotic was of a dingy yellowish grey; numerous dark varicose veins coursed over the surface; and a dull red zone surrounded the cornea. The iris was convex, of a reddish brown, mottled with dark patches of lymph. The pupil was motionless, and bound by adhesions to a yellowish, stony looking cataract, which bulged through it. The eye felt (if I may be permitted to quote the expressive simile of a bystander), "like a stale gooseberry".

On the 26th October, I proceeded to remove the lens. The anterior chamber was not completely obliterated, and I succeeded in passing my knife[1] obliquely across the cornea, making the inferior section. To obtain sufficient space, the wound was further enlarged with the sabre knife. Many adhesions having been divided, an attempt was made, without success, to extract the lens. A free incision was then made in the margin of the pupil, and several other adhesions discovered. I then endeavoured to squeeze out the lens, but failed, and it became necessary to remove it piece-meal. The operation was tedious; but the whole of the fragments, which had constituted the ossified capsule, were at length taken away; the substance of the lens resembled gum water. From the length of time unavoidably spent upon the operation, and the injury inflicted on the iris, it was expected that the eye would have been attacked with acute

[1] This knife is considerably shorter and smaller than those used by Beer and Tyrrell; and the heel is rounded off.

inflammation; the flap was carefully adjusted however, the lids closed, and cold, wet rags directed to be applied. A full dose of henbane was administered. Contrary to my expectations, this man made a most satisfactory recovery; and although at times irritable, the eye no longer caused him the suffering which had rendered his life miserable.

Case iv. A soldier, during the Russian campaign, 1812, was struck by a spent ball on the left eye; the sight was immediately destroyed, and severe inflammation came on. From this time he was constantly subject to violent pains in the eye, lasting many days, and returning after they had seemed to have disappeared. He was seen by M. Desmarres, for the first time, in July 1846. On examination of the cornea, which was partially staphylomatous, an opacity was seen to occupy its lower third, and here there was partial synechia anterior. Near the cornea, the sclerotic was traversed by a number of reddish brown vessels, arranged in a circle, and forming a diffused injection. In the subconjunctival cellular tissue there were large violet-coloured varicose vessels, such as are seen in affections of the internal structures of the eye of long standing, and especially in choroidal disease. Scattered throughout the sclerotic, were slightly elevated blue spots, manifesting its attenuation. The iris was discoloured and motionless. In the pupil, which was open and misshapen, the crystalline was seen of a pale orange-yellow colour. This body, dislocated by the blow, had sunk in such a manner, that the upper border was inclined downwards and forwards, advancing into the anterior chamber, and touching the cornea; whilst above it, a portion of the back of the eye was visible. Vision had been lost about thirty-four years. The severe pains returned whenever the eye was inflamed, which was often the case. The patient was a tall man, but thin, and of a bad constitution: he declared that he had lost his health in consequence of the sufferings caused by his eye, and entreated speedy relief. M. Desmarres, judging that the suffering was caused by the presence of the lens in the anterior chamber, proposed to extract it; and with this view punctured the cornea, as in the operation for cataract, by an oblique incision. The lens was then seized with forceps; it grated like a piece of stone, and could not be extracted on account of the solid adhesions it had contracted with the neighbouring parts. Several other unsuccessful attempts were made. The corneal flap, on examination, presented a multitude of wrinkles, similar to those seen in the corneæ of the dead, after having been exposed for some time to the air; and could not be adapted, on account of the shrinking, to the other lip of the wound. A considerable portion of the cornea was then removed with the keratotome, as in the operation for opaque staphyloma; and M. Desmarres was then enabled, by means of scissors and forceps, to divide the adhesions and extract the lens, which was found to be entirely osseous, or stony. But little pain was felt; but three or four hours after the operation, severe hæmorrhage took place. The blood flowed abundantly, so that the bed of the patient was quite soaked. Compresses of ice, applied to the eye for five or six hours, diminished, but did not arrest, the flow of the blood, which continued for twelve hours after the removal of the cornea. The lids were then cleansed and closed, and covered with sufficient bandages to completely cover the eye. A considerable coagulum formed under the upper lid, and the hæmor-

rhage stopped, but the eye was completely destroyed by suppuration. The patient recovered after three months.

The crystalline was of an absolutely stony consistence: when struck with a stylet, the instrument resounded as if it had touched a stone; the cornea, placed in alcohol, presented the traces of synechia anterior, and it was thickest in the spot of the opacity. The anterior surface of the cataract presented numerous striæ, tolerably regular, converging towards the centre of the crystalline, which was covered with capsule, in part osseous, in part sound; the posterior surface was less dense than the anterior, and on being scraped with a pen-knife, a certain quantity was removed, which being placed dry in a bottle, resembled pounded stone.

Remarks. Ossification of the lens itself is extremely rare. Mr. Tyrrell relates one instance of it, where the capsule was opaque and thick, and contained a mass about equal to one-third of the original lens, hard and brittle, so that it broke on attempting to separate it from the capsule: it was the result of a blow, and was extracted from the eye of a lad of fifteen, who speedily recovered from the operation. A well-marked case is also related by Mr. Wardrop: it was from an eye sent to him by Mr. Allan Burns, of Glasgow. On dissecting back the choroid, the posterior chamber was found filled with a white pulpy mass, and on dividing the crystalline, its central portion was found converted into hard bone. The external laminæ of the lens were soft, those near the centre more consolidated, and the central portion itself of a deep brown colour, perfectly osseous, and exhibiting a laminated structure. Case IV is another example. And it is worthy of remark, that in two out of the three instances, this remarkable change was the result of a blow upon the eye: of the third there is no history.

Ossification of the capsule of the lens is the most frequent form of Osseous Cataracts. The character is that of a shell of bony matter irregularly deposited, some parts being thick, others as thin as tissue paper. The colour is yellowish, and when viewed in the eye, appears as if dotted with white paint. For the following analysis of the cataract extracted in Case I, I am indebted to Dr. Hoffman of the Royal College of Chemistry. "The ash left on incineration was found to consist principally of phosphate of lime; it contained besides small quantities of sulphate of lime, and traces of sulphate of potassa and chloride of sodium. It therefore has a very analogous composition to that of bone."

The agonising pain caused by these cataracts is of a neuralgic character, being the result of the constant irritation of the iris by the pressure of the hard body. So severe is it at times, that it causes temporary delirium; and I have known two instances in which the patients were driven into the pernicious practice of opium-eating, to drown their sufferings in stupor.

There is one point in the history of such cases as those I have related, which cannot fail to strike the observer: that, despite of the difficulty and duration of the operation, the amount of violence inflicted on the eye (which far exceeds that of the ordinary operation of extraction), and the diseased state of the organ itself, which might be supposed to render it prone to inflammation, the recovery is, in the

majority of instances, rapid and satisfactory. The unusual step adopted by M. Desmarres, of cutting away a large piece of the cornea, is of course an exception; and the alarming hæmorrhage described resembles that which occasionally follows the removal of a staphyloma, and is not to be anticipated unless such a proceeding be practised. It certainly may happen, as occasionally, though very rarely, occurs after extraction, that severe hæmorrhage may arise from a branch of the central artery of the retina, but in the three cases of this, with the particulars of which I am acquainted, there was good reason for supposing that a diseased condition of that vessel rendered it incapable of contracting.

In the performance of the operation, the almost entire obliteration of the anterior chamber by the projection of the lens and iris, renders it extremely difficult to pass the knife across it; in such a case, it would be found easier to direct the incision obliquely. That should be free; and if the cataract knife do not make it of sufficient size, the blunt-pointed sabre knife cutting on the convex edge, will enlarge it with facility. In the event of the adhesions to the cornea being so extensive as to preclude the possibility of performing the operation in this manner, it may become a question whether an incision directly across the cornea may not be the best mode of proceeding; the object in view is not to give sight, but simply to relieve suffering, and it must be familiar to many, that similar wounds of the cornea inflicted by accident unite kindly if judiciously treated. The great difficulty, however, is the extraction of the cataract. The iris having lost its elasticity, and being bound by adhesions to the lens, and possibly to the cornea, does not yield to pressure; and the lens, being solid, cannot be forced through the contracted pupil, even after the adhesions have been divided, with such an amount of force as can be prudently applied. The better way then, is to break down the osseous shell and remove it piece-meal, having previously divided the adhesions by sweeping round the margin of the pupil with a fine iris knife. Before placing the flap in apposition, a careful examination should be made, to see that none of the fragments are left. After the lids have been closed, two or three folds of rag, dipped in cold water, should be applied to the eye so long as is felt agreeable, and a full dose of hyoscyamus administered.

Many persons cannot take any preparation of opium, without subsequent nausea and sickness; and therefore hyoscyamus is to be preferred as a sedative after operations on the eye. A tincture, sent to me by Messrs. Taylor of Vere Street, made from henbane dried rapidly at a low temperature, then placed in hot bottles which are immediately sealed up, possesses so much strength, that 30 drops is a full dose. This I usually administer after eye operations, with the best effect.

2, Tenterden Street, Hanover Square, June 1849.

BIBLIOGRAPHICAL RECORD.

On Parthenogenesis, or the Successive Production of Procreating Individuals from a Single Ovum. A Discourse, introductory to the Hunterian Lectures on Generation and Development, for 1849. By Richard Owen, F.R.S. pp. 76. London: 1849.

The term Parthenogenesis, now proposed by Professor Owen, will, doubtless, henceforth be adopted into the language of science. Precision of expression is of peculiar importance in scientific literature: and we are indebted to the learned Professor for having reduced many ideas, which were previously crude and ill-defined, into words having definite meanings, and signifying distinct facts. The convenience of the term "homologue", for example, is daily more and more appreciated.

The volume before us contains the substance of the two first lectures of the course which has recently terminated; and as they are complete in themselves, and devoted to a curious and but little understood subject, they have been published in a separate form. After some excellent general remarks on that which must for ever remain a mystery to man—the first cause of life—those secondary causes, known as the phenomena of generation, are discussed. The essential conditions appear to be a nucleated cell, the product of a nucleated cell, and the combination of the two; the ovum having received the matter of the spermatozoon, is said to be impregnated, and the phenomena that thence arise are essentially the same, up to a certain point, in all animals, and consist of the formation of a germ-cell and its propagation of a numerous offspring, at the cost of the germ-yelk, by a series of reiterated spontaneous divisions. The progeny of the primary impregnated germ-cell, which may be called secondary germ-cells, constitute the germ-mass; this progeny resemble their parent with a diminution of size, to a certain stage of descent, when they may be ultimately reduced to their essential parts or nuclei. But when they cease to exist as germ-cells, they minister to the life of a being higher than themselves, combining to construct its tissues, and to impart important properties to its fluids. "But", says Professor Owen, "not all the progeny of the primary impregnated germ-cell are required for the formation of the body in all animals; certain of the derivative germ-cells may remain unchanged and become included in that body, which has been composed of their metamorphosed and diversely combined or confluent brethren; so included, any derivative germ-cell, or the nucleus of such, may commence and repeat the same processes of growth by imbibition, and of propagation by spontaneous fission, as those to which itself owed its origin: followed by metamorphoses and combinations of the germ-masses so produced, which concur to the development of another individual." (p. 5.) In proportion as we descend in the scale of animal life, we find that the number of the derivative germ-cells and nuclei which retain their individuality and spermatic power, is greater; and the number of those that are metamorphosed into tissues and organs, less.

The learned author then points out, in an interesting manner, the gradual ascent in the scale of animal life, beginning with the *Gregarina*—a mere cell containing fluid, with granules, and a firm nucleus, with one or more nucleoli. The next in order to this simple cell-like animal, are the polygastric infusoria; and in the fresh-water polype, or *Hydra*, a still further advance is made; but there is a very large proportion of retained and unaltered nucleated cells and nuclei, ready under favourable circumstances, each individually, by spontaneous fission and assimilation, to lay the basis of a new polype. The term "spontaneous fission" is, doubtless, familiar to the ma-

jority, at least, of our readers; but as few, perhaps, have reflected on the process and the means by which it is induced, we will quote the opinion of Professor Owen on the subject. "In the polygastria, when favourable influences of light, warmth, and abundant nutriment concur, a central body, which represents the nucleus of the impregnated germ-cell, sets on foot the special act of assimilation and spontaneous fission, and its divisions seem to repel each other to positions equidistant from each other, and from the pole or end of the body to which they are nearest. The influence of these distinct centres of assimilation is to direct the flow of the plasmatic fluid from a common course, through the body of the polygastrian, to two special courses about those centres. So much of the primary developmental processes is renewed, as leads to the insulation of the sphere of the influence of each assimilative centre from that of the other, by the progressive formation of a double party-wall of integument, attended by progressive separation of one party-wall from the other, and by concomitant constriction of the body of the polygastrian, until the vibratile action of the superficial cilia of each separating moiety severs the narrow neck of union and they become two distinct individuals." (p. 8.) When certain nucleated cells, aggregated in a particular part, take on a state of activity, the result of their increase by assimilation and multiplication, is to push out the contiguous integument in the form of a bud, which becomes the seat of subsequent processes of growth and development; and this mode of propagation is termed "gemmation". The Professor then proceeds to a consideration of that curious subject, the representation of a species by a series of individuals, of different powers and forms, succeeding each other in a cycle; as, for instance, the *Distoma tarda*, which, in the course of its life, successively assumes the form of a *gregarina*, a *cercaria*, and a *distoma*. V. Baer, who led the way in experiments on and observing the artificially impregnated eggs of the *Echinus*, found them to be first developed into a ciliated monadiform animalcule, like that of the *Medusa aurita;* but after four days, this animalcule had been metamorphosed into, or had given birth to, a minute creature resembling a *Beröe;* on the fifth day the animalcule unfortunately perished. In the autumn of 1845, Professor Müller discovered in the sea at Heligoland, an animalcule, which from its singular form, like that of a painter's easel, he called *Pluteus paradoxus*. In the following year he ascertained the change of this species into an *Ophiura* (or brittle star-fish), and that of another kind of *pluteus* into an *Echinus*. In the mollusca also, there are examples of this phenomenon. The embryo developed from the ovum of the compound ascidiæ quits the receptacle of the fixed parent in the form of a large cercaria, a freely swimming animalcule; then settling, becomes attached to a foreign body, and develops the organization of the ascidian.

Certain members of the class of insects present generative phenomena closely allied to this alternating mode of reproduction; and the account given by Professor Owen of such a condition in the aphides is highly interesting. "The impregnated ova of the aphis are deposited at the close of summer, in the axils of the leaves either of the plant infested by the species, or of some neighbouring plant, and the ova, retaining their latent life through the winter, are hatched by the returning warmth of spring; a wingless hexapod larva is the result of the development. This larva, if circumstances, such as warmth and food, be favourable, will produce a brood, and, indeed, a succession of eight larvæ like itself, without any connexion with the male. In fact, no winged males at this season have appeared. If the virgin progeny be also kept from any access to the male, each will again produce a brood of the same number of aphides; and carefully prosecuted experiments have shown, that this procreation from a virgin mother will continue to the seventh, the ninth, or the eleventh generation, before the spermatic virtue of the ancestral coitus has been exhausted. When it is so exhausted, a greater proportion of the nuclear germ-masses retained by the last procreant larvæ is

used up, individual growth and development proceed further than in the parent; some members of the last larval brood are metamorphosed into winged males, others into oviparous females. By these the ova are developed, impregnated, and oviposited; and thus provision is made for disseminating the individual, and for continuing the existence of the species over the severe famine months of winter." (p. 23.) Such is the view taken by the author, of a phenomenon which has proved a stumbling-block to many acute observers. Seven years ago that opinion was formed, and whilst confirmed by subsequent observations, it has assisted in explaining the "lucina sine concubitu" in other animals.

A controversy has arisen respecting the theory of alternation of generations, between Professor Steenstrup and Dr. Carpenter. Into the merits of this question, Professor Owen enters at great length; but as it is impossible for us, in our limited space, to do justice to the case, we are obliged to refer our readers to the book itself; one point he mentions incidentally, which we cannot pass by. "The reproduction of parts of higher animals has also been found to depend on pre-existing cells, retained as such. Mr. H. D. S. Goodsir has shown, that in the lobster, *e. g.*, so noted for the power of reproducing its claws, the regenerative faculty does not reside at any part of the claw indifferently, but in a special locality at the basal end of the first joint of each of the legs. This joint is almost filled by a mass of nucleated cells, surrounded by a fibrous and vascular band; and other nucleated cells intervene between this band and the outer crust. The vessels of the band pass onwards for about half an inch and return upon themselves, forming loops. When a claw is broken, or otherwise injured or disabled, the lobster or crab, by a violent muscular effort, casts it off at the transverse ciliated chink or groove which indents the reproductive segment. The new claw is developed by the multiplication of cells, which are soon divided into five groups, answering to the five joints of the future limb; these nascent joints are folded upon each other in the crab, but extended in the lobster; in both they are at first enveloped in a sac formed by the distended cicatrix; the budding limb ultimately bursts this cicatrix, and its growth is rapidly completed. A great proportion of the reproductive cells contained in the basal extremity of the injured limb is used up in the production of the new limb; but a mass of them is retained unchanged at the basal joint, and ready to renew the reproductive process when needed." (p. 49.)

The author remarks, that the physiologist congratulates himself with justice, when he has been able to pass from cause to cause, until he arrives at the union of the spermatozoon with the germinal vesicle, as the essential condition of development,—a cause ready to operate when favourable circumstances concur, and without which cause those circumstances would have no effect. The aim and object of the Professor is, to point out the conditions which bring about the presence of the same essential cause in the cases of the development of an embryo from a parent that has not itself been impregnated. The cause is the same in kind, though not in degree, and every successive generation, or series of spontaneous fissions of the primary impregnated germ-cell, must weaken the spermatic force transmitted to such successive generation of cells. It is longest retained and furthest transmitted in the vegetable kingdom; the zoophytes manifest it in the next degree of force: it is visible in the class of insects, and in the lower mollusca, and as it fades, it is seen in the reproduction of parts—when it is no longer capable of developing a whole.

Many philosophers and acute observers, British and foreign, have brought all the energies of their minds to bear upon the investigation of the phenomena of Parthenogenesis; but, able as have been the explanations offered of this singular condition, and ingenious the arguments brought forward, none seem so satisfactory, none so free from objection, as those by the talented author of this admirable essay.

A PHYSICIAN'S HOLIDAY; OR, A MONTH IN SWITZERLAND IN THE SUMMER OF 1848. By JOHN FORBES, M.D., F.R.S. Pp. 520. London: 1849.

Of the learned professions, there is not one which admits of so little recreation as that of Medicine. The lawyer may unbend his jaded mind, and recruit his strength during the "long vacation": the divine may usually command that convenient twenty days, conventionally known as "the clergyman's fortnight"; but to the wearied disciple of Æsculapius, all holidays are generally denied. Seldom indeed is it, however urgent the occasion, that he can absent himself for even a very few days from the scene of his labours, more especially if that be in the country. We all, nevertheless, stand in need of relaxation from time to time; and as a favoured few are able to enjoy it, it is no small boon to be informed how that can be obtained pleasantly and economically. The interesting volume before us shows how much can be accomplished in a short period by well-arranged plans. To all tourists, it will be a trustworthy and valuable travelling companion; whilst to those who appreciated the spirited Essays of Dr. Forbes, as they appeared in the *Review* created by his energy, so long supported by his talent, and so well known by his name, the perusal of the *Physician's Holiday* will be a source of unmixed pleasure.

The two first chapters afford GENERAL INSTRUCTIONS TO TRAVELLERS. The following remarks are well deserving of attention by a very extensive class of persons: "So far from recommending rigid adherence to a precise and particular DIET, I do not hesitate to say, that one of the great advantages of travelling in cases of this kind (dyspeptic), is that it affords a most favourable opportunity for breaking through the trammels of such a system. Nothing is so easy as to coddle and pamper the stomach into intolerance of all the more common kinds of food, by adherence to certain rigid formulæ of diet; and when this exclusiveness is once thoroughly established, it is hardly possible to break through it in the patient's usual sphere, although, while it exists, firm or stable health can never be attained. The institution of such a system of diet may be very proper, in the first instance, in order to give relief to urgent symptoms, to correct still greater errors in the mode of living, or to give room for a rational system of cure; but when it is made a permanent regulation, and when it and its universal accompaniments—the daily pill and potion—are relied on as the exclusive means of health and strength, nothing can be more delusive or more injurious." After having stated the difficulty of breaking through such a thraldom at home, the author goes on to say that it will be perfectly practicable abroad. "The bracing air, the brilliant sky, the animating scenes, the society of cheerful and emulous companions, and, above all, the increased corporeal *exercise*, will soon produce such a fundamental alteration in mind and body,—in spirits and stomach,—that what would have been felt like poison, will be here not only harmless, but wholesome. Therefore it is that I advise invalid travellers—those at least of the bilious, dyspeptic, hypochondriac, pill-taking class—to follow no special regimen, but to eat the food that others eat, with the sole proviso, that they seek for and see the sights as others do, take all the exercise their strength will admit of, and remember the golden rule of *moderation* at all times, but more especially at the commencement of their emancipation." (p. 31.)

Descriptions of Switzerland and of the Rhine scenery have been so often written, that no ordinary skill was required to avoid sameness and stale repetitions. These, however, Dr. Forbes has avoided: there is a freshness and raciness in his descriptions, a heartiness in the cause, and a thorough determination to cast care aside and make the most of the present, which positively infects the reader, and makes him in imagination one of the party. We might extract page after page of vivid narrative, but however much our

inclination leads us to do so, our space limits us to some of the most striking passages. The party were fortunate enough to witness the descent of an immense avalanche—a scene of singular and awful grandeur. The mass fell from that part of the base of the Eigher mountain, called the Schlossberg. "We were all suddenly roused and startled by a tremendous noise behind us, like a continuous peal of distant thunder, which made us instantly stop; and while we were in the act of turning round, our guides, shouting 'An avalanche!' pointed to the mountain behind us. We looked, and from the lower border of the mist which covered it, and out of which the hoarse loud roar which still continued evidently came, we saw a vast and tumultuous mass of snow rushing down and shooting over the edge of the sheer cliff into the air beyond. At first this had a pointed triangular or conical shape, with the small end foremost; but as the fall continued, it assumed the appearance of a cascade of equal width throughout. In this form it continued until its upper extremity had parted from the cliff, and the whole mass had fallen to the earth, renewing, as its parts successively reached the ground, and with still louder and sharper reports, the sound which had momentarily ceased while it was falling through the air. The whole of the process which has taken so long to describe was the work of a few seconds—half a minute at the most; and all was over and gone, and everything silent and motionless as before, ere we could recover from our almost breathless wonder and delight." (p. 229.)

The old goatherd, whose chalet was near the spot, assured Dr. Forbes that it was the largest avalanche that had fallen from the mountain during the last twelve years; and from subsequent examination, the mass of snow which fell was found to have been enormous.

The interest recently excited in England in behalf of Cretins and idiots, renders especially interesting the account of Dr. Forbes's visit to Dr. Guggenbühl's establishment on the Abendberg: it is his private property, and originated solely in his benevolent desire to benefit this wretched class of his countrymen. He does not, however, confine it to them alone, for within our own knowledge, he took back with him, about twelve months ago, an English idiot; and although but little benefit was expected by many, the child has made excellent progress, and is likely to become an useful member of society. Dr. Forbes speaks in high terms of the arrangements of the establishment, and was fortunate enough to secure the services, for the Asylum for Idiots at Highgate, of one of the most experienced of the Sisters of Charity, instructed under Dr. Guggenbühl's own eye.

The physicians at Bath, and the hydropathists at Malvern, would do well to look to themselves; for, if we mistake not, there are some hints in the book which will make the former successful rivals to the latter, and if we take the *vox populi* as an authority, that is saying a great deal. The small town of Leukerbad is celebrated for its hot baths, which are of the temperatures of 124°, 120°, 115°, 99°, and 94° Fahr. There are eighteen or twenty public baths, each capable of containing from fifteen to thirty-five persons, and numerous smaller baths, and they are thus used. The bathers, male and female, for (being clothed in long robes) both sexes mingle indiscriminately, go into the water at four or five in the morning, remain from one to five hours in the bath, and go into it again, in the afternoon, for two or three more hours. They manage it very comfortably, each person being provided with a small floating table and basket for holding the snuff-box, handkerchief, etc., or for eating off or playing on. The bathers dress and undress in heated rooms, and always retire, for half an hour or more, to a warm bed after the bath. The ordinary period of a course of bathing is twenty-five days, for which the patient pays a Napoleon; the water is used internally as well as externally, from two to ten glasses being taken early in the morning, with an interval of ten or fifteen minutes between each two. The baths are employed for many chronic diseases, especially cutaneous disorders, scrofula, chronic rheumatism, and indolent gout. Dr. Forbes observes that immersion

in a fluid of a temperature approaching or exceeding that of the human blood, for a fourth or third part of every twenty-four hours, during the space of a month or two, must produce some important modifications in the actual condition of the animal functions; and he adds—"As the waters of our own city of Bath are in many respects similar to those of Leukerbad, I would call the attention of the physicians of the former to what has been accomplished by the prolonged diurnal bathing in the latter place. If they will not make trial of the practice on scientific grounds, I expect that they will find it set on foot by some speculator from motives of mere personal interest. I believe that a grand success awaits the fortunate projector, who has the foresight or the boldness to establish a Leukerbad bath at *Bath*." (p. 311.) We hope that the physicians of the General Hospital at Bath, who possess such peculiar advantages for carrying the plan into execution, may give it a fair trial.

In laying down Dr. Forbes' book, let us heartily recommend it to our readers; and conclude by impressing upon all leading sedentary lives, or engaged in pursuits involving wear and tear of the mind, the importance of occasionally taking such a tour as that described in the volume before us. In the words of Dr. Forbes, "it will enable a large proportion of such persons to lay in a fresh stock of health, sufficient to last through the year, in spite of all the exhausting influences of confined air, sedentary occupations, and that overtasking of the mind to which so many of them are exposed, and which is the fruitful source of so many diseases." (p. 15.) Many who cannot afford to spend *a month* in Switzerland, may be able to enjoy *a week* amid the beauties of the English "Lakes"; or amid the sterner magnificence of such scenes as meet the ravished gaze of the traveller as he wanders by the banks of Loch Etive, or climbs the mountains of Arran or of Skye.

Pathological and Practical Observations on Strictures, and some other Diseases of the Urinary Organs. By Francis Rynd, Esq., A.M. Pp. 195. London: 1849.

The author commences with an elaborate account of the anatomy and physiology of the urethra, and then proceeds to consider those changes of the urethra to which the term Stricture is applied, and the effects produced thereby. He divides Strictures into three heads: the simple circular, the banded or bridled, and the irregular. Simple dilatation of the urethra behind the Stricture is the most frequent consequence of the obstruction; but other and more serious morbid effects are likely to arise, as abscess in perinæo, of which the author describes two distinct forms: one in which the rupture of the urethra precedes the formation of the matter, and is the cause of it; the other, in which the abscess occurs first, and opens into the urethra by bursting into it; both terminate in fistula. This chapter is concluded by a full description of the morbid changes of the bladder, which are the frequent result of Stricture, and which embitter the life of the unfortunate sufferer. The second chapter is devoted to the pathology, etc., of retention of urine; it is well written, but does not contain anything particularly novel. In the third chapter, the treatment of retention is described, and the author considers at length the three modes of puncturing the bladder. The operation through the perinæum he is entirely adverse to, nor does he show much favour to that by the rectum; the operation above the pubes is, it would appear, that most frequently practised in Ireland, and is decidedly preferred by the author. The remainder of the work is devoted to the treatment of Stricture, to the pathology and treatment of perinæal abscess, and to affections of the prostrate gland.

The book is very carefully written, and may be consulted with advantage by those who are desirous of refreshing their knowledge, as also by the student. So far as we can discover, however, it is simply practical; and has no claim to originality.

ARGUMENTS AGAINST THE INDISCRIMINATE USE OF CHLOROFORM IN MIDWIFERY. By S. WILLIAM J. MERRIMAN, M.D., Cantab., etc. pp. 27. London: 1848.

MISAPPLICATION OF ANÆSTHESIA IN CHILDBIRTH, EXEMPLIFIED BY FACTS. By G. T. GREAM, Esq., one of the Medical Officers of the Queen Charlotte's Lying-in Hospital. pp. 72. London: 1849.

OBJECTIONS TO THE INDISCRIMINATE ADMINISTRATION OF ANÆSTHETIC AGENTS IN MIDWIFERY. By W. F. MONTGOMERY, A.M., M.D., M.R.I.A., Professor of Midwifery to the King and Queen's College of Physicians in Ireland. pp. 20. Dublin: 1849.

The use of Anæsthetic agents in labour has been hitherto very limited in London and Dublin; and throughout the English and Irish provinces it has hardly met with more favour than in the capitals. In Scotland, on the other hand—both in the towns, and in the rural districts—the intoxicating of women with Chloroform, during parturition, is stated to be very common:[1] even in perfectly natural labour, the proceeding appears to be considered salutary, and in every respect justifiable. The explanation of this diversity of practice in different parts of the empire, we have heard remarked on, as extraordinary, and as indicative of national prejudice; but surely it is not necessary to assign so very contracted and mean a spirit to the medical profession, as the only solution of the otherwise seeming enigma. It was in Edinburgh, among his friends and his numerous pupils, that Professor Simpson first promulgated his truly great discovery, that Chloroform was a much more convenient, and a much better anæsthetic, than sulphuric ether: and it was also in Edinburgh, by the same distinguished Professor, that the practice of anæsthesia in childbirth was tried, and recommended. We attribute the greater prevalence of Chloroformization in Scotland, simply to the greater personal influence which Dr. Simpson, like every physician, has within his more immediate sphere of action: and we feel confident that the practice will very soon settle down into uniformity in all parts of the empire. If anæsthesia be too little resorted to in England and Ireland, this will ere long cease to be the case; and, on the other hand, if it be too indiscriminately employed on the northern side of the Tweed, the error will very speedily be corrected. To assert the contrary, would be to calumniate the profession. It is well worthy of notice, that the titles of the three pamphlets before us imply, that while their authors are opposed to the "indiscriminate" use, the "misapplication", or "indiscriminate administration" of anæsthetic agents, they are willing to admit that there are certain cases of labour in which they would sanction their employment; although in the interior of Mr. GREAM's pamphlet, we find nothing warranting this interpretation. We can hardly suppose that the *universal exhibition* of Chloroform in parturition is approved of by Scottish obstetricians; and if not, the question between the men of the north and of the south resolves itself into one of degree, and cannot be regarded as one of essential difference.

With Dr. MONTGOMERY, we are not inclined to admit the similarity between the pain of a surgical operation and the pains of parturition. "I totally deny", says he, "that '*what holds good in relation to pain in surgery, holds good in relation to midwifery.*' No two things, having a partial resemblance, can be more essentially dissimilar than the pain suffered in a surgical operation and the ordinary, natural, physiological pain of labour, repeated at intervals, more or less regular, leaving, in general, the patient, in the intervals of their returns, free from suffering, *in perfect health*, and, perhaps, full of cheerfulness, or calmly sleeping; and as these pains increase in force and intensity, they carry with them the sweet conso-

[1] Vide *Edinburgh Monthly Journal* for October 1848, p. 209.

lation, so often thankfully expressed by the sufferer, that she knows she is all the nearer to the consummation of her fondest hope, to see, with happy heart and clear unclouded brain, her new-born treasure smiling beside her. A surgical operation is no part of a natural process; and there is generally in the mind of all, an instinctive horror of the surgeon's knife,—ay, to such a degree, that even the strong man and the brave, who many a time, perhaps, has led his followers through the fiery struggle of the battle-field, undaunted, will recoil unnerved and sickening from the sight or touch of it; and, as that knife slowly divides the tender skin, the quivering muscles, and the shrinking nerves, his spirit quails and sinks before the suffering, which promises no other boon but to save him from a life of protracted suffering, or from immediate death. A surgical operation is finished in a few minutes; but if it were, like labour, to consist of several successive stages, which could only be accomplished after many hours' duration, what patient could survive its performance?" (p. 7.) There can be no doubt of Dr. Montgomery being correct in stating, that what holds good in relation to the pain of surgery *does not* hold good in relation to midwifery. The profession, too, as a body are clearly of this opinion; for, as Mr. Gream says,—while anæsthesia "in surgery became general in the shortest possible time, not only in this country but elsewhere, in midwifery it has not only failed to become general in practice, but having at one time gained some little favour, has lost it again, and has now almost ceased to be esteemed." (p. 5.) The first part of the quotation states a fact which is notorious; but we think that the expression "almost ceased to be esteemed" is decidedly too sweeping. Anæsthetic midwifery does not perhaps now possess so many uncompromising advocates as it did twelve months ago, but we are inclined to think that *the value of Chloroformization in a certain limited number of cases of labour is more generally admitted* among English and Irish practitioners than formerly.

The religious objections which Mr. Gream still holds to, have been elaborately, and, we think, successfully met by Dr. Simpson and others.[1]

Having made these general preliminary statements, we will be enabled to avoid recurrence to the topics, in the following separate accounts of the different pamphlets.

Dr. S. William J. Merriman. The pamphlet of this author is clearly and logically written. At the commencement, reference is made to the many and discordant letters and essays, which have appeared on Chloroformization. "The writers alluded to," says Dr. Merriman, "mention a few cases, and generalize upon them; arguing thus from individual to general practice, not from general principles, as laid down by experience, to individual cases, in which the general rules may be more or less departed from, according to circumstances affecting the individual." (p. 4.) Impressed with this deficiency in preceding authors, Dr. Merriman studies,—

1. The history of midwifery, with reference to the establishment of general rules.
2. The nature and properties of anæsthetic agents: and
3. The circumstances which should govern the profession in their employment.

After some allusions to the meddlesome midwifery of former times, and to the progressive discoveries of Ould, Smellie, William Hunter, and others, we are reminded that "it was slowly and clearly demonstrated that the first duty of the practitioner is to let Nature pursue uninterruptedly her own course; and that if she deviates from this course, or is unequal to her task, his next duty is still to respect her laws, and to follow them as closely as possible, in whatever means he is called upon to employ." (p. 7.) And at page 11, we are told—what cannot be too often stated to, or too much impressed on every ob-

[1] Vide Number for April, p. 350.

stetric practitioner—"that the recurrence for many hours of labour pains, hardly ever by itself produces danger to life". This undeniable truth we hold to be a conclusive argument, against the administration of the subtile and potent vapour of Chloroform in natural labour. We should be bringing the parturient female into *some* danger at least: for respite from pain is bought at too venturesome a price, if that price involve the hazard—however slight—of life. It is only when there are difficulties and dangers to overcome, that we are authorized to interfere: and if there be difficulties and dangers which Chloroform, judiciously given, may avert,—which we believe to be the case,—then, but only then, let our parturient patients be subjected to its subtile and potent influence. We do not agree with Dr. Merriman (pp. 21-23) in thinking that the only valid reason for using Chloroform in parturition, is the power which it possesses of allaying pain. Several times we have seen Chloroformization of much benefit in rendering the male urethra lax, in introducing the catheter in difficult cases; and analogous advantages have been recorded as resulting from it in hernia. In a primipara, or in others, therefore, with unyielding rigid os uteri, and strong expulsive pains, intoxication with Chloroform vapours might hasten delivery, and diminish the risk of rupture of the uterus.

The following passage is deserving of consideration:—"Chloroform has been given, in general practice, in cases of excitement from various causes, with very good effect; for example, where a patient has laboured under want of sleep, which ordinary means have failed to procure, Chloroform has quieted the nervous irritability, and brought on quiet and natural repose. With this object, it has been administered with advantage in midwifery, to alleviate the extreme restlessness in tedious labours from anxiety and want of sleep; it is the peculiar property of this class of medicines, that they prevent the sensation of pain, but do not, in moderate doses, prevent the continuance of those actions which cause the pain; hence the Chloroform may be given in doses sufficient to suppress some of the agonizing pain inseparable from parturition, while it still allows the recurrence of the actions of the uterus, and thus does not stop the progress of labour, as might be feared: indeed, it has been supposed to have hastened the birth on some occasions—a result which appears not improbable, for the sedative action of the vapour may have removed altogether the exhaustion previously felt by the uterine nerves, and have rapidly restored to them their pristine energy; on the contrary, it is equally conceivable that, under other circumstances, it may not have restored the nervous irritability, but rather have depressed it, and so, as asserted by some practitioners, have prolonged the labour, by lessening the contractile powers of the uterus". (pp. 22-3.)

We have not room to give more extracts: and we now would conclude our notice of Dr. Merriman's pamphlet by adopting a portion of its last paragraph:—"If a practice have been resorted to, the employment of which was not imperatively called for, and death ensue, whether arising directly from the treatment, or from other causes, how awful is the reflection that we have, in even the slightest degree, hastened the termination of life. Let us bear incessantly in mind, that ORDINARY CASES REQUIRE ONLY ORDINARY MEANS OF RELIEF, AND THAT EXTRAORDINARY REMEDIES CAN ONLY BE PROPERLY EMPLOYED IN EXTRAORDINARY CASES, WHERE ORDINARY MEANS ARE INAPPLICABLE OR INSUFFICIENT."

Mr. G. T. Gream. The variety of topics discussed by Mr. Gream is very great. The following is his table of contents:—"General remarks; Difference between anæsthesia in surgery and midwifery; Report of the Edinburgh Obstetric Society; General feeling regarding anæsthetic midwifery; Religious publications; Etherization not sleep; Similarity of ordinary intoxication and etherization; Complete insensibility must be induced to allay the pains of labour; Narcotism allays uterine action; Why so many cases of artificial

delivery in Edinburgh? Do the maternal passages yield from the effects of anæsthetic agents? Labour rendered difficult by etherization; Children injured by etherization; Mortality among children at Edinburgh; Division of etherization into degrees.—First degree:—Drunkenness. Second degree:—Lascivious dreams; Calumny on English women; Causes of lascivious dreams; Dreams not in accordance with the natural impressions. Third degree:—Convulsions. Fourth degree:—Deaths after operations; Deaths after delivery. After effects of etherization; Uncertainty of the effects of etherization; Deductions derived from the facts recorded."

Mr. Gream is opposed to Chloroformization, as much from conscientious scruples as from medical reasons. This is apparent from the following extract:—"It is sad enough to listen to the delirious exclamations, and wandering expressions incidental to cerebral disease: but to be the actual promoter of a state of gross drunkenness, that condition being increased in its revolting character by the accompaniment of obscene expression and actions, as will be hereafter shown to have occurred, is sufficient, I should hope, to deter most men from attempting such practice in any case of midwifery to which their attention may be called. Let the word drunkenness be heard by any morally educated patient, instead of the softer and more fascinating terms of 'soporization,' etc.: and I will undertake that, however strong an advocate she may be of anæsthesia, the pains of labour, however severe, will be no inducement to her to seek a condition stamped by such immorality".

In *operative interference during Labour*, we agree with Mr. Gream in thinking, that to render our patients insensible, is greatly to increase their danger. "Mr. Banner mentions that 'there is one class of cases in midwifery in which Chloroform ought not to be administered, and that is when instruments have to be used; unless the head is so far advanced that the forceps can be used with exactness, and without any risk to the mother. Men are not all equally clever and expert in the application of the forceps; and much injury has been avoided by the patient's expressions of pain when there has been a wrong application of them. A writer of much celebrity', adds Mr. Banner, 'after an extensive practice of forty years, says, should much pain be experienced by an attempt to lock the blades when well applied, as regards their position, we may be pretty certain a portion of the neck of the uterus is included in the grasp of the instrument; we must inquire on which side of the pelvis the pain is felt, and withdraw the blades from it and introduce them anew.' By depriving the patient of sensation, we take away a great guide to the correct application of the forceps." (p. 20.)

Lascivious dreams arise, says Mr. Gream, from Chloroformization; and the ideas, passing through an amorously excited and bewildered mind, are apt to find vent in such words as ought not to be uttered. He considers these dreamy ravings as arising from two distinct causes, viz.: 1, irritation of the cerebellum consequent on Chloroformization; and, 2, the excitement incidental to manipulation of the sexual organs in operations upon those parts, or to the presence of the fœtal head within the pelvis. We think Mr. Gream has succeeded in showing that parturient women, or others, may, and sometimes do, when under the influence of Chloroform or ether, give utterance to expressions indicative of transient delirium, and sexual excitement: but it also appears, from the statements of many observers, that by bringing the patient more fully under the influence of the drug, these unpleasant manifestations are prevented. We consider that the chance of the occurrence of lascivious ravings, is a strong and legitimate argument against the *indiscriminate use* of Chloroform in labour; but, knowing that by due tact in the administration of the drug, the patient can generally be safely and quickly got through the stage of excitement into that of anæsthesia, we do not attach so much importance as Mr. Gream to the risk of "indecent dreams, and actions in accordance with them." Moreover, firmly believing of the women of England as we—as all—do, that

"The very ice of chastity is in them",

we do not think that *any* accidental inappropriate exclamation by a virtuous lady drugged by chloroform, could, in the strict sense of the term, be indecent or immodest. In many labours, *in which no drugs had been given*, we have heard delirious manifestations partaking of a sexual character, especially when the head was passing the os uteri; but we never for one moment imagined that there existed any mental impurity in the sufferers. We recognized the transient delirium of parturient women so admirably described by Dr. Montgomery in the *Dublin Journal* for March 1834, and we cannot help thinking, that the lascivious (?) indications recorded by Mr. Gream may fairly be included among the phenomena so well illustrated in the memoir just referred to. In making this statement, however, we should be unjust to Mr. Gream were we not to admit, that the mass of facts which he brings forward on this subject are very valuable, and tend, along with others, to restrict the use of Chloroform in labour to certain rare and exceptional cases.

Death from Chloroformization, considering the enormous number of cases in which it has been practised, must be regarded as upon the whole a rare occurrence; but still, the cases of poisoning from Chloroform are sufficiently numerous to show us that we have no right to subject women in natural labour to danger, merely to save them from pains which they can bear without injury. We therefore agree with Mr. Gream in attaching importance to the fatal cases; remarking, however, that he enumerates among them, some which can hardly, with certainty, be included in the list.

The Conclusions arrived at by Mr. Gream are thus given in the last page of his pamphlet.

"1. Inhalation of ether or Chloroform cannot procure an immunity from the pains of labour, because no degree short of the fourth degree of narcotism can have this effect, and narcotism, carried to this extent, paralyzes the uterine action.

"2. Etherization,[1] in midwifery, has no beneficial effect, but simply allays pain. Even if this could be accomplished without interfering with the uterine action, it would not be justifiable to employ it, for pain (in good midwifery practice) does not endanger life, and it would be improper to employ so dangerous an agent solely to alleviate pain.

"3. If patients escape the immediate danger of etherization during labour, they all become, to a greater or less extent, more predisposed than they otherwise would be, to subsequent puerperal disease.

"4. Etherization is likely to be very injurious to the child." (p. 71.)

The only indication of a tendency on the part of Mr. Gream to modify his opinions, is contained in the following sentences appended to the "Conclusions", now quoted:—"I do not intend to condemn the practice of those who, in the operation of turning the fœtus in utero when the liquor amnii has escaped, have occasionally employed it. If rupture of the uterus was apprehended, perchance etherization might have been beneficial. I have never met with any such cases requiring it; for in all instances, however difficult, by time and perseverance, I have been able to accomplish turning, not only without the employment of relaxing agents, but with perfect safety to the mother, and, with only one exception or two (in first deliveries), to the child. In no other instance, however, even admitting it here, do I think there is the shadow of an excuse for employing anæsthesia, either in natural or complicated labour." (p. 71.)

We must now leave Mr. Gream's pamphlet, commending it to the study of all interested in the important subject of which it treats.

III. Dr. W. F. Montgomery. This pamphlet, like everything emanating from its distinguished author, is entitled to much consideration.

Dr. Montgomery is exceedingly dissatisfied with some persons, (whom he

[1] Mr. Gream, in common with many other writers, uses the term "etherization", when he means *chloroformization*.

does not name,) for taking up Chloroformization as a matter of charlatancraft. He alleges that some have "so far forgotten the delicacy and reserve with which such matters should ever be treated, that paragraphs have been inserted in the public newspapers, announcing the delivery of ladies, 'while in a state of insensibility from Chloroform'; and those medical men who have hesitated about, or rejected, the indiscriminate use of Chloroform in natural labour, have been set down as deficient in energy, or in feeling and humanity." (p. 2.)

Death from Chloroformization is thus spoken of by Dr. Montgomery:—

"Chloroform, for a variety of purposes unconnected with labour, has caused death—and that, *sudden death!*—and is it probable—is it reasonable to expect—that women in labour shall constitute the only class exempt from the dangerous influence of this drug? Under all circumstances, 'it is a fearful thing to die'; but it is doubly awful when death comes suddenly, and finds the being, who is about to pass from time into eternity, utterly bereft of sense and reason, and without the power even to ejaculate, with the disciples in their hour of danger, 'Lord, save me, I perish!' An observation of Professor Meigs, of Philadelphia, in his letter to Dr. Simpson, is so entirely consonant with my sentiments on this matter, that I here adopt it as my own: 'I readily hear', says he, 'before your voice can reach me across the Atlantic, the triumphant reply, that an hundred thousand have taken it without accident. I am a witness that it is attended with alarming accidents, however rarely. But should I exhibit the remedy for pain to a thousand patients in labour, merely to prevent the physiological pain, and for no other motive, and if I should in consequence destroy *only one* of them, I should feel disposed to clothe me in sackcloth, and cast ashes on my head, for the remainder of my days'.

"Now the object for which it is so eagerly proposed to incur the risks already alluded to, is simply to do away with the pain attending natural labour. Then the question presents itself,—Is the ordinary pain of labour, *in general*, so great in amount, so intense in its character, or so injurious in its consequences, that we would be justified in running any risk to avoid it, or rather a part of it, for the whole of it cannot be annulled? I think universal experience would answer these queries in the negative.

"Experience has shown that very rapid, easy, and comparatively painless labours, besides the risk of present injury which they entail, are by no means those least liable to serious casualties during their progress, or from which women recover most favourably.

"I have met with but one instance of a woman who bore children without pain. The lady had eight children, and she never gave birth to one of them without being in the most imminent danger of losing her life from hæmorrhage. It seems to me, that the greater pain and risk encountered by the human female in parturition, are intended (as they certainly are calculated) to teach us our mutual dependence on each other for kindness and assistance; and thus to draw closer the bonds of love and attachment, which should unite man to the cherished object of his dearest and holiest affections."

Dangers and Disadvantages arise from Insensibility during Labour. Dr. Montgomery remarks:—"In the progress of ordinary labour, our judgment is assisted by the natural expression of the pain suffered, as indicating its true character and efficiency; and so affording a guidance not lightly to be dispensed with. I was once consulted about a case, where the gentleman in attendance told me himself that he had attempted, as he thought, to rupture the membranes with his pointed nail, and only desisted in consequence of the patient's complaints that he was cutting her; which was the fact, as he was endeavouring to perforate, not the membranes, but the distended and attenuated anterior section of the cervix uteri. In this instance, had the lady been in a state of unconsciousness, we can hardly doubt that mischief of a very serious kind would have ensued.

"It has been asserted that pain is the agent which destroys life in protracted labours, because it can be shown that the mortality is in direct proportion to the length of time the labours lasted; and it is alleged that, if the pain of parturition were cancelled by anæsthesia, we would have more favourable results, that we would 'increase the chances of a more speedy and a more healthy convalescence.' Now, I would ask, does any one believe that, when a woman dies of the effects of a protracted labour, it is the pain suffered which causes her death, and not the long-continued struggles, and efforts, and pressure on soft parts, causing fever, vascular congestion, inflammation, and sloughing, etc.?—or can we believe that Chloroform could annul or remove these agencies which really do the mischief, even were we rash and reckless enough to keep the woman under its influence throughout the lengthened ordeal of her tedious labour?

"Do women recover better who have been treated with anæsthetic agents during labour, and are there fewer deaths among them? The results recently published by Dr. Simpson[1] of 245 cases of labour, all treated with anæsthetic agents, of which five died, or one in forty-nine, most assuredly do not confirm such a doctrine." (pp. 12-13.)

In what cases of labour ought we to give Chloroform? Dr. Montgomery grapples with this question in a very fair and candid spirit. After repudiating the idea of using it in perfectly natural labour, he goes on to say:—"While I object, and most strongly and solemnly, to the *indiscriminate* administration of Chloroform in natural labour, I fully acknowledge its value and utility in general in obstetric operations, such as instrumental delivery, turning a child in utero, or the removal of a retained placenta, and also in some peculiar circumstances of natural labour, independent of any operation. Thus, I would give it in a case where the pain greatly exceeded its usual amount, and became intolerably severe. I would also use it in those cases occasionally to be met with in practice, in which a severe nervous pain is superadded to the ordinary pain of labour. Thus, in one case, such frightful pain was endured along the course of the sciatic nerve that I thought the lady would have lost her senses, although a woman of a steady, sensible, and strong mind, and naturally very patient. In another instance, a spasmodic pain attacked the sphincter of the rectum with such overpowering intensity and torture as to render the lady absolutely frantic. In such instances as these, I would certainly have administered this remedy, had it been known at the time of their occurrence, which, however, was before its introduction into practice.

"With regard to its use in obstetric operations, while I fully acknowledge, as I have already stated, its value and utility *as a general rule*, I must add, that I think there are circumstances which should modify our *universal* adoption of it even for such purposes, lest we should, for the sake of avoiding a temporary inconvenience, run the risk of entailing a more serious and permanent evil. Thus, for instance, in a case of retained placenta with hæmorrhage, and a very flabby, uncontracted, and inert uterus, I think we would better consult the ultimate safety of the patient by omitting it, and subjecting her to the temporary suffering of passing the hand into the uterus, which would thereby be more effectually stimulated to contract, and to retain its contraction.

"And again, I would say that, instead of commencing, in all operations with the crotchet, by first putting the patient under the influence of Chloroform, and throwing her into a state of insensibility, it would, in my judgment, be more judicious to wait before giving it, for a reasonable time after reducing the head, to see whether the uterine energy might not be sufficient by itself to force down, and perhaps expel the diminished head, a result

[1] The five cases referred to above, have been declared by Dr. Simpson not to have been deaths from Chloroform. EDITOR LOND. JOURN. OF MED.

always most desirable, for many important reasons, and which we will certainly be much more likely to impede than promote, by placing the patient in the first instance under the paralysing influence of Chloroform.

"Then again, in all such cases of instrumental delivery, we must never forget that our patient, if under the full sedative influence of Chloroform, has lost all power of warning us of any accidental error which we may commit in operating, of which her pain would warn her, were she not in a state of insensibility; it therefore behoves us, under such circumstances, to use the utmost caution and circumspection (at all times most necessary, but here in a far greater degree), lest, without being aware of it, we should inflict an injury which our best efforts afterwards might fail to remedy." (pp. 18-19.)

In noticing these interesting pamphlets, our object has been, neither to conceal nor to obtrude our own opinions, but to make the respective authors speak for themselves. In doing so, we think we have placed valuable information before our readers. Those, however, who wish to master the subject of anæsthetic midwifery in all its details, must peruse the writings of Dr. Simpson, Dr. Snow, and others, in addition to the essays which have now been under our review.

PRINCIPLES OF SCIENTIFIC BOTANY; OR, BOTANY AS AN INDUCTIVE SCIENCE. By DR. J. M. SCHLEIDEN, Extraordinary Professor of Botany in the University of Jena. Translated by EDWIN LANKESTER, M.D., F.R.S., F.L.S., etc, Lecturer on Materia Medica and Botany at the St. George's School of Medicine, London. Plates and Wood-cuts. pp. 616. London: 1849.

A good treatise, in the English language, calculated to make the reader acquainted with the opinions of the various investigators of vegetable physiology, and, at the same time, to exhibit it as an inductive science, has long been a desideratum. To Dr. Lankester, then, the gratitude of the student of Botany is due, for having rendered accessible to him the researches and philosophical observations of DR. SCHLEIDEN.

The following subjects are treated of in the work:—

First Book. Chemistry of Plants. 1. The inorganic elements. 2. The organic elements. *Second Book.* On the Plant-cell. 1. Form of the plant-cell; The cell regarded as an individual; Cells in combination, and intercellular formation. 2. Of the life of the plant-cell; Functions of the individual cell; Life of the cell in connexion with others. *Third Book.* Morphology. 1. General. 2. Special. *Fourth Book.* Organology. 1. General. 2. Special. *Appendix.* Analytical papers; Lists of old trees; New passages in the third German edition of the first and second books; On the use of the microscope. To this last part of the appendix we would, in passing, direct the attention of those engaged in microscopical researches.

The size of the work, and the manner in which the subjects are treated of, precludes us from giving an analysis. Dr. Schleiden has evidently, in addition to his own laborious researches, made himself master of everything which had been done in the study of vegetable organography and physiology up to his time. In comments on each paragraph, he gives critical observations on the opinions of previous observers; and generally condemns the common practice of attending to forms, and giving them names expressive of no physiological fact. The following quotation well expresses his views on some of the common expressions which we meet with in Botanical works:—"Botanists who imagine that the object of Botany is merely the correct definition of many species for their herbaria, will blame me for superficiality and want of profundity, in that I have so briefly and roughly treated the forms of leaves, which are the most essential grounds for the definition of species. I cannot help this: I merely find in these, as it may happen, good and bad methods of nomenclature for various partly or wholly divided surfaces or borders, for filiform or

solid forms,—nothing at all botanical, much less, therefore, the properly scientific part of Botany. If a slender filiform leaf be called a petiole, I have no objection to it, if nothing else be called by this name but a stalk-like leaf; but when it is superadded that the lamina is suppressed here, this is unscientific and false: if a leaf merely developed into a plate be alone called *folium sessile*, there is nothing to be said against the term; but when, in addition, it is said that the petiole is abortive here, this is again pure imagination. Whence in all the world does it follow from the essence of a plant, that a leaf must regularly consist of lamina and petiole? The entire method in use up to this time, of describing the leaf according to blade and stalk, and of reducing all other forms under this conception, might so far have value, if we would from the analogy of zoology, hold by the most perfect form, in order to obtain a type, with which to connect all others as deviations; then, however, we must start from the compound leaf, as evidently the most perfect. But it is as false to call all deviations, abortions, and Nature's unsuccessful attempts at formation, as it would be ridiculous to say that in *Monas lens* the toes and nails, the cartilage of the ear, etc., were abortive. Expressions such as 'Nature has here attempted, she has deviated from her type,' are altogether unscientific, and no better than childish anthropopathy. In *Mesembryanthemum*, for instance, Nature has not deviated from the type of leaf-formation, but her type is different here from what it is in other plants; each in its kind is perfect, attaining the grand purpose of all vegetable development, the development of the most manifold construction of form from the very simplest elements." (p. 267.)

In conclusion, we would recommend to our botanical friends the study of Dr. Schleiden's *Principles of Botany*, translated by Dr. Lankester. They must peruse it, if they desire to make any progress towards as perfect a knowledge of structural and physiological botany as has been hitherto attained.

Memoirs on the Ganglia and Nerves of the Uterus. By Robert Lee, M.D., F.R.S., Physician to the British Lying-in Hospital, and Lecturer on Midwifery at St. George's Hospital. *With Five Engravings.* 4to. pp. 36. London: 1849.

It is well known to the profession, that Dr. Robert Lee has long and laboriously been engaged in researches on the Ganglia and Nerves of the Uterus; and that while some admit that he has proved their existence and continuity with the sympathetic and spinal nerves, others maintain that he has been entirely misled; that he has, in fact, mistaken absorbent vessels and tendinous fibres for nervous structures! We are inclined to think, however, that the delineated dissections, descriptions, and corroborative testimony of the many eminent men brought forward within the work now before us, establish the reality of Dr. Lee's discoveries. We commend the evidence to the notice of all interested in anatomy and physiology, especially to those who are interested in the elucidation of the reflex physiology of parturition.

Cerebral Affections occurring most commonly in Infancy and Childhood, including notices of their History, Causes, Diagnosis, Prognosis, and Treatment. By Valentine Duke, M.D., etc. pp. 90. Dublin: 1849.

To discuss profitably the Cerebral Affections of Infancy and Childhood, larger limits are required than ninety sparsely printed pages. Dr. Duke, however, has attempted this impracticable task; and has thereby prevented himself from producing, what would have been much esteemed by the profession—a good clinical treatise on this class of diseases, which, from their frequency and formidable character, are of great interest to all, but especially to those who are engaged in general family practice.

On Healthy and Diseased Structure, and the true Principles of Treatment for the Cure of Disease, especially Consumption and Scrofula; founded on Microscopical Analysis. By William Addison, M.D., F.R.S., Licentiate of the Royal College of Physicians. pp. 320. London, 1849.

The object of Dr. Addison is, at the outset, to establish an analogy between vegetable and animal pathology, and especially between the "retrograde metamorphosis" of plants, and scrofula. The following paragraph will point out pretty clearly his views on the subject:—"Retrograde metamorphosis occurs, when the form and qualities of a texture are completely changed by the intrusion of elements distinctive of a prior or lower type; as when the green chlorophylle cells of the leaf intrude upon and displace the coloured cells of the petal: or when the structure of the stamens assumes the characteristics of the petals. In these cases, the function, quality, and character of an organ are subverted, not from the intrusion of elements wholly foreign to the organism, but in consequence of the displacement of natural elements, by others of a prior or lower type." (p. 20.) These remarks, which are contained in some observations on vegetable morphology in the Introduction to his work, he proceeds to apply to the pathology of animals.

The remaining part of his work is divided into two parts. Part 1. treats of Practical Physiology, Practical Pathology, and Practical Psychology. In his chapter on Practical Physiology, Dr. Addison says that the evolution of the tissues in the embryo takes place in the following order:—cells, forming soft parenchymatous, or corpuscular granulation textures; fibres, being of a more coherent nature; and lastly, cartilage and bone. The fibrous tissues, he considers, are of a higher grade of development than the cellular; and he moreover describes the capillary blood vessels as partaking of the character of the textures to which they are distributed; those entering serous membranes having their walls composed of fibrous elements, and those supplying the mucous membranes and secreting glands having their coats formed of cellular or corpuscular elements. In the process of nutrition, there may be a defect in the metamorphosis which the elements of the blood undergo; and the excessive formation of colourless cells in the irritated blood vessels of a part "clearly shows, how the elements of any special texture may become mingled with, or supplanted by, cell-organisms furnished from the blood."

In his chapter on Practical Pathology, Dr. Addison treats of *Scrofula* and *Inflammation*. He differs from those who describe tubercle as a matter *sui generis;* and considers it as merely one of the modifications of the colourless elements of blood. He says that he has "repeatedly examined with the microscope the material deposited in the air cells of the lungs in pneumonia, and compared its characters and appearance with that forming a tubercle, without being able to detect any more essential or specific difference between them, than exists between purulent matter recently excreted, and that of an old chronic abscess." He admits that the cells of recent tubercle contain a greater amount of fatty or oily matter than those of an abscess; but does not consider that this affords sufficient grounds for making a specific distinction. The essential element, both in scrofula and inflammation, is then, according to Dr. Addison, the abnormal formation of cells,—in other words, a retrograde development; but in the latter, the cellular development is soon replaced by that of the part affected, whereas in Scrofula the cells overrun and destroy the natural fabric. The latter of these phenomena he proposes to designate by the term *vis scrofulosa*. "If," he says, "as we may well do, we use the term vis medicatrix naturæ to express the reproduction of the special from the general, and thereby include the phenomena of cures; so, analogously, we may use the term vis scrofulosa to express the immerging of the special

in the universal; thus including the chief and most characteristic phenomena of scrofulous disease." (pp. 77-8.)

A highly interesting and instructive chapter on PRACTICAL PSYCHOLOGY follows those which we have just noticed. The following quotation contains the groundwork of the author's views on this subject.

"All the facts of human experience have long been grouped in four great classes: 1, the inorganic; 2, the vegetable; 3, animal; 4, man. This classification we assume to be appropriate, on the ground of antiquity and universal assent; and if appropriate, then, according to the authorities cited, causes are, *ipso facto*, suggested. Assuming then, in conformity with this classification, the existence of four causes, let us, in order to avoid confusion, designate them by the symbols *a*, *b*, *c*, *d*.:—

"*a*. Being the sign of the cause or power, upon which the properties of inorganic matters depend,—their cohesion, crystallization, weight, impenetrability, and affinities.

"*b*. The sign of the morphological force,—the organic vital power of vegetable structures; as evidenced in growth, nutrition, reproduction, and secretion.

"*c*. The sign of the power from which springs the sensual perceptions, the emotions, and emotional movements of animals: and

"*d*. The symbol of the power embracing the thoughts, mind, and moral sentiments of man.

"Upon this view of the subject, it is evident that, in vegetable bodies, the vital morphological force (*b*) does not supersede the inorganic force (*a*), but is superadded to, and incorporated with it. Growth, nutrition, and secretion, coexisting with cohesion, weight, and impenetrability. So in animals, the cause of sensual perceptions and motions (*c*) does not supersede either the morphological or the inorganic force (*b* and *a*), but is superinduced and incorporated with them. And lastly, in man, thoughts, mind, and moral feelings (*d*), are superadded to, or engrafted upon, the lower animal, vegetable, and inorganic natures. The subject, therefore, may be thus represented:

1st Class.—Inorganic,—a
2nd Class.—Vegetables,—$a + b$.
3rd Class.—Animals,—$a + b + c$.
4th Class.—Man,—$a + b + c + d$.

"This quadripartite subdivision of the causes of human life enables us to appreciate distinctions in the terms, structure, constitution, temperament, and mind. For inorganic bodies have a structure; vegetables have a structure and a constitution; animals have a structure, a constitution, and a temperament; and man has a structure, a constitution, a temperament and a mind. Moreover, there are distinctions in the organs of the human body coordinate with this subdivision: bones, ligaments, and fibrous textures, administering to the inorganic properties, cohesion and form; lungs, liver, digestive organs, and blood, to the morphological functions; ganglia, nerves, and muscles, to motions and sensual perceptions; and the brain proper to intellect and mind." (pp. 92-94.)

The importance of attending to the distinction of neurological from morphological phenomena is obvious; yet it is too often either neglected or insufficiently attended to. Dr. Addison clearly points out how the two may coexist, or be independent. In the structural changes which take place in the human body, the nervous system is generally affected, because its elements are intimately mixed up with the texture affected; while in many cases, neurological phenomena exist independently of organic lesion. Hysteria, especially, is an instance of the latter kind; and the following observation of Dr. Todd, quoted by Dr. Addison, well expresses its character:—"It would be superfluous in me to enlarge upon the importance of your having accurate views of the characteristic signs and symptoms of hysteria; you all know how frequent a malady it is, and you doubtless also know how various are the

symptoms it exhibits, how apt it is to mimic other diseases affecting the most different parts of the body; and so accurately does it simulate the characters of disease of more serious import, that it will often deceive the physician, requiring the greatest care and discernment to distinguish the hysterical from the organic malady." (p. 108.) It is evidently because the neurological phenomena of disease, being often most prominent, have hitherto been chiefly attended to, that the diagnosis of hysteria has been so obscure. Organic disease is mostly morphological and neurological; hysteria is neurological alone; and when the two coexist, the difficulty of diagnosis is greatly increased.

In his practical deductions from these observations, Dr. Addison points out the importance of attending to the power operating from within—the mind—as an element in the treatment of disease. We quote his remarks on the relative importance of mental and corporeal remedies.

"Outward agents are necessary to the life of man, and they are also causes or conditions of disorder and disease; so the inward psychological agent is necessary to the phenomena of life, and also influential in producing disturbances and disease,—the living body, the subject of the morphology, being, as it were, the connecting link of the series,—standing between the visible and the invisible,—having, on the one hand, exterior agents and influences; and on the other, interior powers and impulses. It is scarcely necessary to adduce particular examples, to establish these almost self-evident propositions. It is well known that things from without, and emotions from within, are productive of illness, discomfort, and disease, traceable in the morphological functions of the body; and that the will of the person has, within certain limits, a control over both. It follows, these propositions being true, that, in order to preserve health, outward objects—air, water, food, climate, heat, and light, require attention, care, and selection; that the temperament, or emotions, need control, governance, and cultivation; and that the intellect, or mind, profits by example, experience, and education. That which is true universally, is of course true in particular instances; and therefore, in the treatment of particular diseases, and in our efforts to cure Consumption, we frequently find the best endeavours opposed by unfavourable external conditions we cannot alter; by irritating emotions we cannot quell, and mental anxieties we cannot remove. In large and populous cities, where multitudes of persons live crowded together in wretched habitations, following unhealthy occupations, with insufficient food, an impure atmosphere, and bad water, health is at a low standard, and the mortality is excessive. For the sickness and mortality above the natural average, the physician knows the cure; but it is beyond his power to employ or enforce the remedy. He cannot feed the hungry, purify the atmosphere, or clothe the naked, nor alter the social position of his patient so as to admit of change of situation. It is in these instances that unfavourable external conditions cut at the root of infant life, deteriorate the morphology of the structure, and produce a dire amount of inflammatory and scrofulous disease.

"In the better classes of society, who command the comforts and conveniences of life,—and who, therefore, rear more of their children into youth,—new sources of illness arise, in the emotions, passions, and temperament, mental avocations, and disposition; whereby various nervous, hysterical, and hypochondriacal, disorders are produced. These neurological and mental disturbances have very often their root entirely in habits and education; and it happens, therefore, frequently in such complaints, that unreasonable expectations are formed of the resources of medical art, when the real origin of the malady is educational, and beyond its proper sphere. Medicines come within the category of external agents exercising specific influences on the morphological functions, and are therefore specially adapted for the treatment of inflammation and scrofulous diseases; but not applicable, with the exception, perhaps, of narcotics, to disorders springing from temperament

and mind, and dependent on misdirection, misgovernance, and ignorance. Medicines hold the same relation to the human body, that manures and composts do to vegetation; they are powerful agents, to be used only upon experience, and directed to their proper object,—morphological phenomena. There are what the farmer call *hot* manures; which means, that they are extremely strong, and if applied in too large a proportion, burn up vegetation,—that is, cause it to droop and wither as if fire had passed over it; but which, if applied in proper quantity, act favourably, and cause the plant to grow strong and healthy. Precisely in the same sense, the medicines we employ are *hot*,—that is, powerful in accelerating or depressing nutritive functions; and therefore demanding judgment, care, and education, in their use.

"It is, therefore, only when the morphological functions are ascertainably wrong or disturbed, that drug medication, as a general rule, is applicable; and if, in neurological and mental disturbances, too much be expected from the medicines of the physician, disappointment ensues. This begets distrust; loss of confidence adds to the original distress; and the consequence is, that resource is often found in a lively faith in some innocent specific. A change of medicine, larger promises, and new faces, change the irritating idea, and effect the cure. In this country, where so large a proportion of society is able to command the luxuries of life without labour, and where the educational standard, in public schools and universities, is so high, disorders from emotional or nervous causes, and from overwrought mental exertion, are very common. And if the routine of a fashionable medical practice were looked to as the criterion, it would, I think, be found that, for one well-characterized idiopathic morphological disease, there will be four of simple disorder of nerves and brain from emotional and mental causes.

"The influence of the higher powers of temperament and mind, imagination and belief, as exciting and continuing causes of disorders, has been generally thought too ideal to be of practical importance in the treatment. Hence, emotions, faith, and distrust, as hygienic and therapeutic agents, have fallen into unmerited neglect. 'Physicians,' says Lord Bacon, 'are some of them so pleasing and comformable to the humour of the patient, as they press not the cure of the disease; and some other are so regular in proceeding according to art, for the disease, as they respect not sufficiently the condition of the patient.' A gentleman was very angry with his medical attendant for telling him he was nervous; but he was afterwards pleased with another for telling him 'his liver was as white as a sheet, and his mucous membrane like scarlet.' The one was as good a guess as the other; but the emotion excited was irritating and unfavourable in the former case (for persons do not like to be thought feeble in the control of their emotions), but soothing and favourable in the other,—for the cause appeared more unquestionably beyond his own control. Admitting, in its full extent, the agency of temperament and mind as disturbing causes, and knowing that it is the affectionate and warm-hearted who are most apt to be influenced by the hope of specific material remedies for complicated neurological disorders, it is our duty to strengthen their hopes of recovery by sympathy and consideration; and, whilst complying with all reasonable desires, to discountenance fanciful proceedings and measures of treatment, which first annul the judgment, and are then mercenarily pursued by subjecting the intellect to the imagination. The greatest call upon the resources of medical art is made, when a strongly emotional character co-exists with actual morphological disease,—hysteria, with inflammation or scrofulous disease." (pp. 122-126.)

Part II. treats of the Symptoms, Causes, Therapeutics, and Cure of Consumption.

The chapter on Semeiology contains, together with some valuable remarks, records of several instructive cases of tubercular Consumption, embracing "a general outline of the symptoms observed, or complained of, by

those affected with Consumption; pourtraying the constitutional nature of the malady; the wide extent of its sympathies; together with its anatomical and other relations." (p. 180.)

The chapter on ETIOLOGY is one which should be carefully studied. The ravages of disease are not to be considered as confined to the organ which, as appears during life, is most prominently affected. "All the most recent and careful pathological investigations demonstrate in every morphological disease, particularly in children, and in such as are scrofulous, that though one organ or texture suffers more prominently or severely than the rest, and from which, therefore, the disease derives its most characteristic features and name, yet it is not there the whole disorder is to be found; anatomical changes are not confined to that organ, but are more or less extensively present in others also. The conclusions upon this point, derivable from simple visual inspection after death, are confirmed and extended by the microscope. And, as our refined analysis proves that Consumption cannot make sensible progress in the lung without involving sundry forms of texture; so, in like manner, it demonstrates that no serious anatomical change can take place in any organ, without analogous textures elsewhere evincing, when microscopically examined, a more or less decided disposition to similar alterations. When, therefore, we speak of infants dying of teething, pneumonia, or diarrhœa; and of youth dying of measles, scarlet fever, or hydrocephalus, it is necessary to bear in mind that the terms convey no adequate information with regard to the extent or ramifications of the malady. They may refer us to the organ which has suffered most, but afford no information upon minor or secondary anatomical changes in the rest." (pp. 188-189.) And, *vice versâ*, when we speak of recovery from a disease, the term implies no more than the relief of the patient from the most prominent malady. The sequelæ of some prior illness often unfold themselves after such apparent recovery; and hence it is necessary to be acquainted with the history of previous illnesses and cures of the patient.

It is observed, that the mortality is greatest up to the third year; and that it again undergoes an increase between fifteen and twenty-five years. In the first case, the growth of the embryo before birth must be taken into consideration. It appears subject to two causes: its own inherent morphological properties, defect of which produces monstrous growths, moles, and blemishes; and an external cause, arising from its connexion with and dependence on the mother, defect of which, interfering with its nourishment, produces scrofulous disease.

Then, within the first year after birth, we have the establishment of the phenomena of respiration, reception of food, and dentition; and atelectasis, pneumonia, diarrhœa, convulsions, and teething, remove twenty per cent. during this period. Dr. Addison dwells here at some length on the natural history of the lung, as contributing to explain the large amount of sickness and mortality occasioned by pulmonary disease. Atelectasis, or imperfect expansion of the lung at birth, may, as well as pneumonia, leave some of the lobules useless and condensed; and this condensed tissue, though we have no positive proof of its identity with tubercular matter, bears the same relation to the surrounding parenchyma. Both may remain immersed without visibly disturbing the general health; and both, when new sources of irritation are applied, may become foci of retrograde morphological changes in the surrounding textures. Phthisis is not merely a malady "arising simply from hardened or useless portions of lung, of any particular kind or special origin: but from an altered nutrition,—a retrograde morphology,—with excreting properties in the pulmonary textures around it."

In assigning causes to disease, we are apt to regard only that which is most obvious. For instance, when a person has been exposed to wet or cold, to scarlet fever, or pneumonia, and gets consumption, we say that the latter disease was caused by the wet or cold, etc. Now there is no invariable con-

nexion between these; but the wet and cold, scarlet fever and pneumonia, are *events* completing a concurrence of conditions, of which a previously existing anatomical *state* is one. A foreign body, as a musket ball, may remain in the lung imbedded in a dense, smooth, glistening cyst, and we say the patient has recovered. But we have also formed fibrous adhesions in pericarditis; these are very undesirable, but as they are incidental to the cure, we cannot altogether elude them. The patient here has been cured, but has not recovered. The formation of the contractile cicatrix from a burn is an analogous occurrence. There may then be, in the lungs, an apparent cure of the atelectasis, pneumonia, or injury from external causes, yet not a recovery: an anatomical state may remain, which waits only some new cause, a new irritation, or a succeeding malady, to determine a retrograde metamorphosis. The following are the conclusions at which Dr. Addison arrives on this subject: "First—Anatomical changes or states remain after the cure of wounds and diseases, which possess more or less of permanency, and though not evolving symptoms, yet affect the future health of the person. Secondly—These anatomical states are *veræ causæ* for differences of constitution or diathesis,—because the aggregate expression of the whole cannot be the same when important parts are altered. And, in the lung, they are predisposing causes of Consumption; because, from an universal law, the nutrition of natural textures in contact with unnatural states, is disposed upon slight events, to go back to the general, rather than keep up to the special form." (p. 216.)

These conclusions establish the importance of attending, especially in infancy and youth, not only to the symptoms of the chief malady and its attendant complications, but to the time, progress, and results of the cure. And we must further make a distinction between the anatomical states resulting necessarily from the most perfect cure, as cicatrices, adhesions, opacity of the cornea after ulceration, hardened lobules after atelectasis; and those of which tubercle is the type in the fibrous, and ulceration in the mucous, membranes. The weakly or delicate class is hence divisible into two sub-classes: the former being peculiarly liable to asthenic forms of illness; the latter to scrofulous disease and Consumption. In treating a patient, we have to study his history, "with a view to determine,—whether the organization be in all important parts sound and undamaged, and the constitution therefore robust; or,—whether the structural changes of a former cure possibly render the constitution delicate; or, lastly,—whether the defects of a cure establish the scrofulous diathesis.

"In the first class, many events or irritating causes will pass off harmless; and when disorders do occur, they are prompt and regular, easily recognized, and easily treated. In the second class, minor events or irritating causes will provoke disturbances which are tardy and irregular; nutrition in contact with the anatomical changes of cures being disposed to general, rather than special, types. In the third class, retrogradations spring up or supervene, without any noticeable event or adequate external cause, the constitution is scrofulous, and Consumption probable. And it may be laid down as a general rule of practice, that those active interferences, as regards the abstraction of blood, purgation, etc., which may be proper and needed for inflammation in persons of the first class, will be improper and injudicious for those of the other two classes." (p. 219.)

The last chapter relates to the THERAPEUTICS and CURE of Consumption, and contains some highly valuable observations on the following subjects:—Facts relative to cure in Fractures and External Disease; on Growth and Absorption; the Doctrine of Interference; the Process of Cure a relative Phenomenon; Alterative agents; Synthetical facts, regarding the growth of Scrofulous Disease in relation to Therapeutics and Cure: Cases, and Conclusion. The remarks throughout are illustrated by cases. The length to which we have extended this notice precludes us from saying more, than that this chapter is of equal merit with the rest of the work.

PRACTICAL REMARKS ON THE USE OF THE SPECULUM IN THE TREATMENT OF DISEASES OF FEMALES. By THOMAS B. MITCHELL, M.D., Fellow and Licentiate of the Royal College of Surgeons in Ireland, Master of the South-Eastern Lying-in Hospital, and Lecturer on Midwifery in the Dublin School of Medicine. 12mo, pp. 83. Dublin: 1849.

DR. MITCHELL'S little book may be regarded as a sign of the times,—a result of what all engaged in practice know to be a fact,—that *the Speculum is in fashion*. Some years ago, when MR. ACTON advocated its use, his conduct was looked on disapprovingly by the majority of the profession; and it is alleged, we believe truly, that some of our obstetric physicians still proclaim its employment to be un-English, and grossly indelicate. In such sentiments, we have no participation; though we respect the character and admit the skill of some of those who hold them. *Unnecessary* examinations with the Speculum deserve to be denounced, by every right-feeling man, as abominable breaches of propriety; but then they are *not more*, but *less* flagrantly so, than unneeded vaginal exploration by the finger; for, as Dr. Mitchell remarks, "the instrument can be introduced, and the diseased part brought into view, without any exposure, save what is requisite to show the end of the Speculum." (p. 16.) When symptoms suggest the presence of serious uterine disease, we are bound to use every available means to discover the nature of the patient's malady; but, on the other hand, we are not justified, on mere surmise of trivial affections, which can be successfully managed without specular or digital examination, to propose either the one or the other of these distressing ordeals; for distressing in the extreme are they, at all times, to every modest woman.

The cure within late years of various chronic cases, the nature of which had not been detected till the Speculum was used, has naturally reached the ears of many female invalids, and led their minds to the belief, that they too were suffering from similar affections. This has occurred in several cases within our own knowledge; as we have discovered from patients, in whom there was no uterine disease, consulting us and others, under the impression that they were so afflicted. From circumstances somewhat analogous, the stethoscope got quickly into great vogue, and became regarded with mysterious respect by thoracic invalids, real and imaginary. When we affirm that the stethoscope and the Speculum have become *fashionable*, we must admit that this has, to a great extent, arisen from the notoriety of the advantages derived from exploration by them, in cases formerly misunderstood. Let it not, however, for one moment be supposed, that we deem fashion anything but a dangerous guide to the physician; we only desire to call attention to the fact, that in two remarkable instances, it is in the main coincident with sound medical doctrine; and in doing so, let us say, in friendly caution to those yet on the threshold of their obstetric career, that such coincidences are too apt to make dangerously facile the declension into the ways of charlatanism, often, alas! more lucrative than the paths of scientific medicine.

Dr. Mitchell's book, we repeat, is a sign of the times, and, as such, has value; but we cannot discover that he has added to our stock of knowledge; and to some of his opinions and statements we demur.

In the preface, we are informed by the author that, in the preparation of his notes, he "consulted the works of Montgomery, Churchill, Astruc, Capuron, Manning, Lee, Bennet, Ashwell, Whitehead, etc., from whose valuable pages he has received much information, which he takes this opportunity of acknowledging." In place, however, of this general and jumbling citation of authorities, it would have been better, in the body of the work, more frequently to have given to each their meed of merit. For example, the names of Dr. H. Bennet and others ought to have been associated with the observations on uterine disease in the virgin, and in the pregnant woman, and also, with what is said of the uterine surface, whence polypi fall.

The plates are so very unsuccessful as representations of uterine disease, that we do not think they will be understood.

PARTURITION, AND THE PRINCIPLES AND PRACTICE OF OBSTETRICS. By W. TYLER SMITH, M.D. London: 1849.

(*Continued from p. 478.*)

We now propose to give as good an account as our space permits, of the applications to practice of the physiological doctrines formerly unfolded. If we have any difficulty in doing this, it is because this practical application is not limited to any particular part of the practice of midwifery, but extends over the whole of this department of medicine. There is scarcely a point in Obstetrics in which the study of the motor powers concerned in impregnation, gestation, parturition, and lactation, will not prove of service to the practitioner.

We have been much struck, while perusing the lectures chiefly devoted to physiological topics, with the number of practical hints on all that relates to functional disorders of the reproductive system in the female. Much of the treatment of impotence and sterility in the female must depend upon the just comprehension of the motor acts of coitus and conception, which we have clearly described. We use the word impotence as applied to the female, for Dr. Tyler Smith shows that the distinct orgasm exists in the healthy female. When the orgasm is imperfect, or altogether wanting, impotence is the result, but the subject of this affection is not therefore necessarily sterile. The woman may be impotent as regards the orgasm of coitus, but yet the spermatozoids of an insensible coitus may reach the ovulum, and be followed by impregnation and conception. It is well known that women in a state of trance, and also when unconscious from drugs, have become pregnant from connection during their insensibility. A highly interesting case, by Professor Rokitansky, of Vienna, will be found recorded at p. 673 of this Number. It presents an example of a converse condition to that just referred to, the sexual orgasm being present, and continuing in old age, while the individual was incapable of menstruation or conception, from non-development of the ovaries and Fallopian tubes.

The first practical subject treated of by the author is ABORTION, to the cause and treatment of which, the Ninth and Tenth Lectures are entirely devoted. In these lectures, Dr. Smith is not content with saying, "this disease of the ovum produces abortion; that emotion of the mind causes miscarriage; a diarrhœa, or a gastric disturbance brings about the premature expulsion of the ovum." He dives more intimately into the action of causes of this kind, and traces the actual routes by which these causes of abortion reach the uterus, and excite it to the premature contraction which expels its contents. He sets out by declaring, that there are only two great classes of ordinary causes of abortion; namely, those which depend on irritation of the extremities of excitor nerves, and those which depend on irritation of the spinal centre. Of these, the EXCENTRIC or REFLEX causes of Abortion are first studied. They consist of irritation of the mammary, trifacial, vesical, ovarian, erectal, vaginal, and uterine nerves. Of these reflex causes of abortion, we believe one of them, the mammary, had not been observed by any previous author. It is nevertheless of very considerable importance.

"Cases occur in which, during prolonged lactation, two or three conceptions and abortions follow each other, the latter being caused by the irritation of constant suckling. The question naturally suggests itself,—whether it is not the constitutional debility, rather than the local irritation, which induces abortion in these cases; and there can be no doubt that this, like many other anæmic conditions, may help to produce the accident. There is, however, over and above this, mammary irritation as a distinct cause. I have observed cases in which, owing to the synergic action between the uterus and the breasts, the secretion of milk had been almost entirely arrested by conception —the infant being chiefly supported by feeding. The child would still suck most vigorously, in its attempts to obtain milk, until the uterus was excited

to the expulsion of the ovum; and after the abortion has occurred, the secretion of milk returns abundantly. Such cases are very different from those in which the breasts are dried up from debility. If the synergic relations between the mammæ and the uterus required any more obvious proof, I might refer to cases on record, in which actual metritis has been caused by the application of sinapisms to the breasts in amenorrhœa. It is important to recognize mammary irritation as a cause of abortion in the early months, because it may be mistaken for a copious menstruation; and the woman, misled by the subsequent profusion of milk, may allow of its recurrence, and so suffer considerable constitutional injury." (pp. 127-8.)

Our readers should bear in mind the real signification of a *reflex* cause of abortion, and not be content with the mere word. This is laid down in the strongest terms in the following passage, which applies not only to reflex abortive actions, but to other pathological reflex actions of the pregnant, parturient, and puerperal states:—"One point I would insist on most emphatically, namely, that in cases of vesical irritation, or rectal irritation, we cannot correctly talk of the extension of nervous irritation from these organs to the uterus, by structural contiguity and continuity, or because they are supplied by nerves from the same source. Vascular phenomena may so extend from one organ to another in the same vicinity, but nervi-motor phenomena never can do so. There are abundant vascular anastomoses to account for such extensions of vascular phenomena, but there are no anastomoses of the nervous fibrils. However close the irritation may be to the motor organ, all the motor action which does not depend upon irritation of the muscular fibre, or upon sensation or emotion, is reflex in its form. The uterine contractions of abortion caused by irritation of the rectum and bladder—nay, even of the uterus itself—is as truly reflex and spinal as the uterine contractions excited by trifacial, gastric, or mammary irritation. I insist on this point, because I frequently observe relaters of cases speaking of motor sympathies between the bladder, uterus, and rectum, as though there were some short cut between these organs, whereas there is no motor connexion or route whatever, except it be *through* the spinal centre, and by way of the excitor and motor nerves. In all there is the excitor nerve, the spinal centre, and the reflex motor nerve concerned; at one end of the nervous arc there is the physical irritation, at the other, the motor contraction." (p. 133.)

Dr. Tyler Smith has entered more fully than any previous writer into the connexion of Ovarian Irritation with abortion. He considers that throughout the whole of pregnancy, in women of the abortive habit or diathesis, the ovarian periods or classes of pregnancy, reckoning from the last catamenial flow, should be watched with great care. It was with a view to direct special attention to these periods, that Dr. Smith first constructed his periodoscope, though the instrument was subsequently extended so as to form a complete calendar of all the periodic phenomena of sex, whether in the impregnated or unimpregnated states.[1] Under this head, Dr. Smith directs attention to a peculiar and important form of abortion, commonly mistaken for sterility; in which the ovulum, being impregnated, is expelled at once, instead of being allowed to form its normal attachment to the uterus. Ovarian irritation is the common cause of this premature expulsion. Thus, many cases of dysmenorrhœa in married females, are really cases of frequent abortion at this early date; and the treatment is that of obstinate dysmenorrhœa.

The CENTRIC or DIRECT causes of abortion—those which excite the expulsive uterine actions by irritating the Spinal Centre—are, Toxæmic states of the blood, and Emotion. These two causes—the one *physical*, the other *psychical*—affect the spinal centre as directly as though this organ were irritated by a scalpel in an experiment. The due appreciation of the causes of abortion is of immense importance in the prevention of this accident. Dr. Smith goes over, in a careful manner, the various modes in which all the causes

[1] LONDON JOURNAL OF MEDICINE, January 1849, p. 81.

already referred to, can be kept in check by the removal of all the reflex and direct irritations of the nervi-motor system, to which gestation is liable. We quote a passage respecting the use of the plug, as conveying a useful practical hint, before we pass on to the consideration of other subjects.

"I have already referred to the use of the plug or tampon, sometimes necessary in threatened abortion with hæmorrhage, in cases where we still hope to save the ovum. The plug should not be so large as to stimulate the vaginal surface excessively, and it should be fairly introduced into the upper and roomy part of the passage, so as not to irritate the ostium vaginæ; at the same time there should be nothing like hard pressure on the os and cervix uteri. Whenever the presence of the tampon, carefully applied, permanently increases the periodic pains felt in threatened abortion, it should at once be withdrawn, unless we have resolved to abandon the ovum to its fate." (p. 143.)

Hitherto, the only idea connected with the use of the plug has been the mechanical suppression of hæmorrhage; but it is evident at once, that it must also act as an excitant of reflex action, so that, used empirically, it might do and undo at the same time. Some excellent practical comments are made upon the question, "When should we relinquish all hope of saving the ovum?" When this hope has passed, Dr. Smith recommends a purgative enema as the best and most certain mode of exciting the uterus to throw off its contents. When the abortion is inevitable, it is necessary, for the sake of the mother, to assist in its completion as soon as possible. We have ourselves witnessed cases in which the purgative enema, as recommended by Dr. Smith, has had the best and most instantaneous results.

Of the MANAGEMENT OF NATURAL LABOUR we need say little. The rules for keeping labour natural, and preventing the occurrence of difficulties and complications, flow spontaneously from a comprehensive knowledge of the physiology of this process. On this head we need only refer to the work itself, and to our former notice.

After the subject of Natural Labour, Dr. Smith gives in his Thirteenth Lecture, a minute account of the Pathology and Treatment of Congenital Asphyxia. Dr. W. Hale has shown, that the first respiration of the new-born infant is excited by reflex action, from impression on the surface of the body at birth; and he has also shown that in the process of asphyxiation in young animals, certain gasping respiratory movements occur which are excited, not reflexly, but by the influence of venous blood upon the medulla oblongata. Proceeding from these points, Dr. Smith gives good reason for believing that in the majority of cases of labour, but particularly when this process is severe and protracted in its latter stages, the child is born in a state of partial asphyxia, from the contractions of the uterus upon the fœtal breathing organ, the placenta, and pressure upon the umbilical vessels. The asphyxiation in cases of breech presentation is of course more advanced at the time of birth. Under these circumstances, the child, if born alive, is born with these gasping movements, which become mixed with the reflex movements of respiration, until natural respiration be established. Very often the child passes through these respiratory movements of asphyxia, before the head has emerged through the vagina; in which case the child dies almost inevitably, unless these centric movements can be made subservient to respiration. That is, unless the mouth and nostrils of the child, but particularly the latter, can be supplied with air, either by opening the vagina with the fingers, depressing the chin of the child, or conveying an inspiring tube to its mouth. There can be no doubt that the study of the early respiratory movements of the fœtus must contribute largely to the saving of fœtal life. Our space does not permit us to give quotations from this part of the work; but we strongly advise the perusal of the whole of the present lecture, which is rich in practical directions for the management of infants born in a state of partial or entire

asphyxia. The whole armamentus supplied by a knowledge of the reflex function is applied in a simple and convincing manner.

We now approach the most important practical portion of the work before us, namely, that in which the physiological doctrines, contained in the earlier lectures, are applied to the treatment of the numerous accidents and complications of childbirth and the puerperal state. Hitherto, the applications of the *mechanisms* of parturition to practice, have been most minutely considered, to the almost total neglect of the more important *motor actions*, which both in health and disease are the ruling powers. The Fourteenth Lecture contains a sketch of these applications; it is here shown, that many of the most imminent dangers met with by the accoucheur depend upon excess or perversion, and upon deficiency of those nervi-motor actions which have been previously considered. Dr. Smith observes:—"We may divide the MOTOR DERANGEMENTS OF LABOUR into two classes.

"CLASS I. 1. Abortion. 2. Precipitate Labour. 3. Rigidity of the Os Uteri. 4. Rupture of the Uterus. 5. Laceration of the Perinæum, etc. 6. Excessive After-Pains. 7. Encysted Placenta. 8. Inversion of the Uterus. 9. Hour-Glass Contraction. 10. Metastatic Pains. 11. Puerperal Convulsions.

"CLASS II. 1. Uterine Inertia. 2. Tardy Labour. 3. Sinking. 4. Uterine Hæmorrhage. 5. Placenta Prævia. 6. Retained Placenta. 7. Labour with Paralysis."

The remaining lectures are occupied with the practical development of this synopsis.

In the Fifteenth Lecture, we have an exposition of the Causes of Excessive Motor-action, under the heads of emotion, voluntary effort, ovarian irritation, position of the patient, size of the child, size of the pelvis, digitation by the accoucheur, etc.; followed by the modes in which the excitability of the utero-spinal nervous system, may be most readily reduced. This reduction consists in the proper management of all obstetric manipulations; the regulation of motion and volition; the maintenance of the supine position; bloodletting in severe cases; nauseating doses of antimony; with the employment of other subsidiary measures which are pointed out.

The observations respecting manipulation, and the principles upon which it should be conducted, are so admirable, that we quote the following passage relative to this very important point: "'Taking a pain,' as it is termed, is necessary to ascertain the state of the parturient canal, particularly the os uteri, and to ascertain the presentation and mechanism of the individual labour. Beyond this, the manipulations frequently resorted to, have no precise intention, except it be to satisfy the mind of the patient and her friends, and impress them with the belief that the accoucheur is rendering assistance during the pains,—a belief generally without foundation. No principle has been recognized in making examinations, nor any distinction made between the effects of frequent digitation, in cases where laceration or other dangers are impending from excessive action, and others from which peril is incurred from inertia. I believe that, in the present practice of midwifery, particularly among young accoucheurs, manipulation is more frequently resorted to in acute than in tardy labours. There is a natural anxiety not to have seemed to fail in rendering assistance in those cases in which the most instant of the accidents of midwifery occur; and hence the fingers are almost constantly within, or at the mouth of the vagina." (pp. 220-221.)

The following extract relates to the distinction between the mere sensation of pain, and parturient motor power. It is a simple, but comprehensive idea, one that should be seized by the mind of every sound obstetrician,—that the uterus may be excited to tremendous motor action by an examination which gives no pain; that the uterus may even be ruptured by a violent contraction of the organ itself, which yields no extraordinary suffering until the rent has actually occurred: "The term excitation, in its application to spinal patho-

logy, has a peculiar meaning, very different from sensation or irritation. It may be said that sensation belongs to the cerebral, irritation to the vascular, and excitation to the true spinal system. It cannot be too much dwelt upon, that there is no relation whatever between pain and spinal action, whether pathological or physiological. This one idea alone, when it comes to pervade the whole obstetric art, will, I have no doubt, effect a great change in the practice of midwifery. When any considerable augmentation of the vis nervosa occurs in the spinal system, moderate stimulation frequently excites stronger reflex actions than actual violence would do. In the case of the stomach, we see the act of vomiting more readily excited by tickling the fauces with a feather, than by ruder measures. The part which is the excitor of vomiting, may even be ulcerated without exciting this act; so likewise will gentle manipulation of the os uteri, under certain circumstances, produce more excessive motor actions than mechanical violence, or even rupture of the organ. This important fact, so capable of salutary application, has never been more than faintly recognised. The stimulability of the spinal system requires special study with reference to these points; but no advance could be made without a knowledge of the principle of reflex spinal action. Wanting this principle, I believe the practice of 'taking pains,' even in the most careful manner, has caused nearly as many accidents as the ruder forms of malpraxis. The uterus has been ruptured by the uterine action excited by 'taking a pain,' and a fatal convulsion has been caused by even the cautious introduction of the hand into the uterus." (pp. 223-224.)

The Sixteenth Lecture treats of RUPTURE OF THE UTERUS, AND LACERATION OF THE PERINÆUM. Dr. Smith believes the former to be generally caused, not, as is supposed, by pressure and mechanical violence, but by excessive uterine action. He teaches, that the uterus is not commonly burst open by the advancing fœtus, or crushed between the fœtal head and the bony pelvis; but that it tears and rends itself by its own contractions. This view of the subject is supported by a great number of facts; and there can be no doubt, in the main, of its correctness. Dr. Smith believes that, in cases of labour in which the labour is protracted, the contractions of the uterus produce a softened state of the muscular tissue, which predisposes it to laceration. He compares the uterus, under such circumstances, to the muscles of a hunted animal, or of the heart after inordinate action. The common rule in cases of arachnoid laceration of the uterus, is to expedite delivery by artificial means. Against this Dr. Smith protests most strongly; showing, by a reference to cases, that this accident very frequently occurs at the very moment of taking a pain, or of some other manipulative interference. The true preventive treatment, in these cases, consists in the reduction of the excitability of the utero-spinal nerves, and the avoidance of all excitor causes which are not inevitable to the particular labour. The child must pass through the parturient canal; but we must be careful not to increase the irritation it causes in this transit by any stimulus we may ourselves supply. Of laceration of the perinæum, we will only say, that most other authors recommend pressure on the perinæum as a preventive of the accident. Dr. Smith looks upon this pressure as a frequent *cause*; and, what is more, supplies the explanation. Irritation of the ostium vaginæ excites the reflex action of the uterus in increased force, and thus bursts open the perinæum before it has become sufficiently dilated. There can be no doubt of the truth of this. In the common practice, the perinæum is supported (? irritated) in acute labours; while it is left alone in tardy labours, when it might be useful. We quite join with the author in his description of the absurd position of the accoucheur doomed to squeeze the sphincter ani for hours together.

Dr. Smith's remarks on the prevention of laceration are full of practical value: "Where there is the apprehension of this accident, the indication throughout is to moderate the motor action, so as to give time for the gradual dilatation of the os externum. To fulfil this, the examinations should be as seldom

as may be consistent with proper attention to other points, such as ascertaining the presentation, and making those changes in the position of the presenting part which may be required. Great care should be taken to preserve the membranes entire until the os uteri is fully dilated; it is even beneficial if they should remain unbroken, so as to act with fluid pressure on the perinæum. Besides attention to these points, the rectum, the bladder, and the stomach, should be kept from irritation, lest these organs should become excitors of unnecessary parturient action. Volition and emotion require to be cautiously regulated; as both voluntary emotional motor efforts frequently produce laceration. The best mode of preventing this is to encourage the patient to cry out, the open state of the glottis taking off the pressure, and rendering voluntary and emotional efforts alike impossible. Emotional motor action may often be thus neutralized by exciting a voluntary cry; but sometimes emotion is so powerful as to defy this control; the woman, in a state of desperation almost amounting to rage, makes the most tremendous efforts at expulsion: in such cases, Denman states that he has obtained a respite by suddenly telling her that the child was actually born!" (pp. 241-2.)

The Seventeenth Lecture is occupied with RIGIDITY OF THE OS UTERI, ENCYSTED PLACENTA, HOUR-GLASS CONTRACTION, INVERSION OF THE UTERUS, AND AFTER-PAINS.

The following philosophical *resumé* gives the pathological relations of these accidents in a few words:—"The resemblance between rigidity of the os uteri and the most simple form of encysted placenta—namely, sphincteric closure of the os uteri with retention of the placenta—is at once obvious. The same contracted state of the os uteri is present in inversion, after the uterus has descended through the os uteri. In the form of encysted placenta, or irregular action of the uterus, constituting hour-glass contraction, we have precisely the same condition of the middle portion of the uterus as that which obtains in the second stage of inversiouteri. In simple hour-glass contraction, the cavity of the uterus is divided into two parts by the contraction of the middle portion of the organ; but when, owing to irregular action of the fundus, this part of the organ descends into the cavity of the uterus, and the hour-glass contraction then occurs, the fundus uteri is seized by the contracting ring of the uterus, borne down through the os uteri and vagina, and inversion is thus rendered complete. After the inversion, the os uteri, which dilates to allow the inverted uterus to pass, becomes firmly contracted. Again: all these abnormal actions, occurring after delivery, are but modifications of excessive after-pains. In severe after-pains, it is easy to feel with the hand that the uterus becomes hard and prominent at particular points, and soft and depressed at others. From these irregular contractions the more serious irregularities of uterine action arise. Sphincteric closure of the os uteri prematurely, is the most simple derangement; next comes the annular contraction of the upper part of the cervix, or the body of the uterus, in hour-glass contraction; and lastly, the phenomena of inversion, which is the most compound of all these disordered actions. Thus rigidity of the os uteri, encysted placenta, inversion of the uterus, hour-glass contractions, and excessive after-pains, are merely modifications of irregular uterine action, and they are all convertible one into the other." (pp. 253-4.)

We had intended to bring this notice to a close on the present occasion: but we find that, although a very few pages would contain the remainder of our observations, the necessary space could not be so well afforded in the present, as in the succeeding number—in which we shall conclude our analysis of Dr. Smith's admirable work.

[*To be concluded in next number.*]

USE OF ALCOHOLIC LIQUORS IN HEALTH AND DISEASE. By JOHN CHADWICK, M.D. pp. 123. London: 1849.

That the GIN-PALACES and BEER-SHOPS are the curse of England, few medical men are ignorant; for it falls to their lot, more than to that of any other class, to see them in their true character, as the sources of three-fourths of all the crime, disease, disloyalty, and pauperism so rife among us. We do not think, however, that pledged abstinence from alcoholic liquors by a large section of the respectable portion of the community, is more than an Utopian dream of the philanthropist; nor do we think that contending for "total abstinence" doctrines can issue in much practical good. On the other hand, were the question to be largely agitated as one of "Financial Reform," as well as of Moral Regeneration, the makers of gin, beer, and whisky, would be driven from their intrenchments: though they are immensely powerful in the magistracy, and in the legislature, they are not beyond the reach of public opinion. Remember the Corn Laws. We feel assured, that were the energies of a Cobden directed to this reform, it would in a few years cease to be the policy and the reproach of the British Government, to encourage drunkenness.

We assent to much contained in Dr. Chadwick's work; but we think that his facts and arguments only tell against the abuse, and not against the use, of alcoholic liquors. We also think, that by taking up the extreme view of the question, he has lost sight of more practicable reforms. Still, we are inclined to hope, that the extensive perusal of his work may do good: it may lead some to avoid as excessive and destructive, what they now ignorantly conceive to be moderate and innocent indulgences.

Doctors, too, in their consultations on STERILITY, (now apparently so common among the wealthy), might do well to try, as their first prescription, abstinence from alcoholic drinks, and all provocative diet. Dr. Chadwick quotes the following passage from Dr. Trotter's book on the Nervous Temperament. "A few years ago, I was consulted by some particular friends, of great affluence, on the bad health of their wives, who, to the regret of all, had never been in that happy way

'Which ladies wish to be, who love their lords.'

These ladies, after being married for several years, without having children —devotees of fashionable life, and a prey to painful nervous affections—are now the mothers of healthy boys and girls, and enjoy the best health imaginable. All these happy changes were effected by little assistance from medical prescription; they were brought about by reversed modes of living." Diet and regimen we believe to be (if properly directed) quite capable of enabling many women deemed barren, to have offspring. It is an improved mode of living which makes women fruitful in our colonies of Canada and Australia, who never were, and never hoped to be, mothers in this country.

CRITICAL DIGEST OF THE BRITISH AND FOREIGN MEDICAL JOURNALS.

PRACTICE OF MEDICINE AND PATHOLOGY.

MR. WHITE COOPER ON PROTRUSION OF THE EYES, IN CONNEXION WITH ANÆMIA, PALPITATION, AND GOITRE.

THE attention of MR. WHITE COOPER having been attracted by the communication in the *Edinburgh Monthly Journal* for February last, on "Anæmia and its Consequences", by Dr. Begbie,[1] he has offered his views on the subject through the *Lancet*. Mr. C. has seen five examples of the disease in question; and two of the patients had had a course of mercury for the supposed hydrophthalmia. The following is Mr. Cooper's valuable paper, with some slight curtailment.

The attention of the profession was, I believe, first directed to this combination of morbid changes by Sir Henry Marsh, and has since been commented on by Dr. Graves, Dr. Stokes, Dr. Macdonnell, and more recently by Dr. Begbie; but in each instance the condition of the eyeball has been alluded to as a secondary symptom, which indeed it must in strictness be considered. As, however, it occasionally happens that it is regarded by the patient and the medical attendant as a disease *sui generis*, and is treated as such, my intention is to refer more particularly to its symptoms, appearances, and peculiarities.

CASE I. A lady, twenty-four years of age, had enjoyed good health, although of delicate frame, until she was twenty-one. At that time her health became impaired by affliction. Palpitation distressed her greatly; and for this, frequent leeching in the præcordial region was had recourse to, with temporary relief. After the palpitation had existed about six months, she perceived an enlargement of the thyroid gland, and at the expiration of another six months, an alteration in the aspect of her eyes was noticed by her friends, although she was unconscious of it herself. At this time she suffered much from headache, singing in the ears, and depression of spirits. The bowels were constipated; the catamenia, at first irregular, became suppressed, and at the monthly periods she suffered much from increased pain in the head, flushing of the face, and hysterical attacks. Such was her condition when she came under my care in February 1845. There was then marked prominence of the eyes; but when the lids were closed, the globes could be pushed back into the orbits by gentle pressure. On careful examination, no change of structure or unhealthy condition of the eyes themselves could be detected. There was neither hardness of the globes, tenderness on pressure, discolouration of the sclerotic, nor was there the slightest impairment of vision. There had never been any pain, muscæ, nor scintillations. The complexion of this young lady was chlorotic, and her countenance indicated languor and mental depression. Pulse 110, small, but sharp and thrilling. Enlargement of the thyroid gland, especially of the right lobe, was evident. The stethoscope discovered a bruit, synchronous with the systole of the ventricles, in the præcordial region, and the peculiar sound, indicative of anæmia, was heard in the veins of the neck. After careful consideration, it appeared that the symptoms were in connexion with anæmia, rather than the result of organic disease. She was directed to take the effervescing draught, with carbonate of iron, (hereafter referred to,) twice daily; to regulate the bowels with pills

[1] Vide LONDON JOURNAL OF MEDICINE, March 1849, p. 273.

of aloes and myrrh; to use a tepid salt-water bath in the morning, followed by friction of the person, nutritious diet, and as much fresh air as possible; the eyes to be frequently bathed with cold water. Three months elapsed before I saw her again, when a marked improvement was visible. She had gained flesh, the eyes were decidedly less prominent, and the catamenia had just reappeared; the pulse 80, and firmer; the systolic bruit and venous murmur greatly diminished, and the palpitations less. The liquor oxysulphatis ferri was now prescribed thrice a day, the bowels to be regulated by Marienbad water, with occasional doses of aloes and myrrh. This treatment, modified from time to time, was continued for eighteen months; and when the patient took leave of me, the prominence of the eyes had disappeared, the thyroid gland was considerably lessened in bulk, the sounds and action of the heart were natural, and the general health restored.

Case II. Margaret H——, aged twenty-five, of chlorotic aspect, became a patient of mine at the North London Eye Infirmary in May 1845. She applied on account of the remarks to which an unusual prominence of the eyes subjected her. She stated that her health had always been delicate; that during the last three years she had been subject to violent palpitation and intense headache. She was not aware of any prominence in her eyes until about two years before that period. She had consulted two medical men: one thought there was a tumour behind the globes; the other regarded the case as true hydrophthalmia, and subjected her to a course of mercury, which made her mouth very sore, weakened her greatly, but did no good to the eyes. At sixteen, menstruation had commenced, and continued regularly until she was nineteen, when it became suddenly arrested, from her having caught a severe cold; it had not returned. Severe pain in the head, giddiness and throbbing on assuming the erect posture, dyspepsia, loss of appetite, and cold extremities, were complained of, together with occasional hysterical attacks; pulse 108, and feeble; a soft systolic murmur was heard extending into the carotid and subclavian arteries, and in the neck the anæmic murmur. The whole of the thyroid gland was enlarged, though not to any great extent.

The eyes protruded considerably, but were free from hardness, and readily retreated into the sockets under gentle pressure. The sclerotic was of a natural hue, the movements of the iris active, and the sight perfectly good; the upper lids were dusky, and somewhat drooping. There had never been either pain or muscæ. For nine months, she was treated with iron in various forms and combinations, hyoscyamus, aloes, and myrrh, friction to the surface and spine, cold to the eyes, and nutritious diet. The amendment was gradual, but steady; and when she left town, the eyes had nearly recovered their natural aspect, the catamenia were restored, and her general health greatly improved.

Case III. A young gentleman, aged 17, was brought to me on the 12th of November, 1846. He did not appear more than fourteen, and his voice was piping. From infancy he had been delicate, and since twelve years old had been subject to palpitation, especially after exercise; this had increased, with violent throbbing, aching in the head, and singing in the ears. His sleep was disturbed by frightful dreams; appetite bad; and he showed a disinclination to the slightest effort, bodily or mental. About eighteen months before I saw him, the eyes began to assume an increased prominence. The case was considered dropsy of the globe, and treated by a course of mercury; at the

expiration of which the eyes were more prominent, and the general health more impaired. I was unable to detect any morbid change. The sight was perfect, and there never had been pain or uneasiness in them. Enlargement of the thyroid gland being visible, the preceding cases occurred to me. He stated that the enlargement had come on about the same time that the eyes began to protrude. On examining the heart, a powerful impulse was perceptible, and a loud murmur heard, synchronous with the systole of the ventricles. On the following day a consultation was held with an eminent physician, and we agreed in opinion that there was no organic disease in the heart, but that the undue action was referrible to irritability, and the bruit to anæmia. A belladonna plaster was applied to the præcordium, and a mixture containing hyoscyamus, with camphor mixture and cascarilla, prescribed. This was followed by preparations of iron, cold salt-and-water sponging, and friction. A nutritious diet was enjoined. He returned to the south of England at the expiration of a month, and from time to time communicated with me. Five months elapsed before I saw him again, and a marked improvement in all the symptoms had taken place. The effervescing iron draught had been taken for two months; it was exchanged for the citrate, which disagreeing, was followed by the liq. oxysulphatis, which suited him admirably. Soon after his return home after his second interview with me, not being satisfied with moderate horse-exercise, but keeping hunters, he must needs follow the hounds, and a recurrence of the irritability of the heart was speedily excited. A third time I saw him, and insisted on rigid attention to the rules laid down. At the end of twelve months he had grown two inches in height, his form had become developed, the prominence of his eyes had disappeared, the thyroid gland had decreased, and although the heart was still irritable, the bruit had ceased, and the sounds were natural.

Case iv. Miss W——, aged nineteen, consulted me, October 9th, 1848. Her countenance was pale; lips and conjunctivæ bloodless; manner languid; and the short peculiar cough so characteristic of hysteria frequently heard. Her eyes projected in a marked manner, although not to the extent visible in the other cases. On the lids being closed, and gentle pressure applied, the globes receded into the orbits. Her vision was perfect, and there were no symptoms, objective or subjective, of congestion or morbid action in the eyes. There was general enlargement of the thyroid gland, producing what is called 'a full throat.' The bruit of anæmia was heard in the neck, and in the præcordial region; the pulse 110, small, and jerking. This lady suffered exceedingly from headaches, the bowels were constipated, and there was total loss of appetite, with coldness of the extremities. The catamenia had appeared at fourteen years of age, but had always been scanty and irregular. She was frequently troubled with hysterical attacks, and neuralgic pains in various parts of the body.

The treatment pursued has been the regulation of the bowels by the pill of aloes and iron; the effervescing iron draught, with calumba, twice daily; friction to the spine, and salt-water ablution. Under this treatment there is every prospect of perfect recovery.

Case v. R. B——, aged twenty-nine, is at present under my care. She is of dwarfish stature, weak constitution, and her health has always been indifferent. "She menstruated early, but has never been regular. About twelve years ago she began to suffer from intense headaches and palpitation, brought on by the slightest exertion. The eyes gradually became protruded, and have so continued. There is considerable enlargement of the right and middle lobes of the thyroid glands; anæmic murmur in the neck and heart." Such was the account when she came under my care, nine months ago; but under treatment similar to that pursued in the other cases, general amendment has taken place, and the projection of the eyes is decidedly less.

Remarks. These cases, in the majority of instances, are examples of simple

protrusion of the eyes, and not of dropsical enlargement of the globes. True hydrophthalmia is characterized by the following symptoms: viz., pain in the eye, gradually increasing in severity; impairment of vision, usually terminating in amaurosis; sluggishness of the pupil; a dusky-bluish hue of the sclerotic; and a stony hardness of the globe. When we consider the tough unyielding structure of the sclerotic, it is hardly conceivable that such an increase in the fluid contents of the globe should take place as to cause positive and visible enlargement, without pain or uneasiness, without muscæ or scintillations, or without the slightest dimness of vision. Again, when we reflect how delicately the refractive media are adjusted one to the other, and how, in old age, a very trifling diminution in the fluid contents of the globe gives rise to marked alteration in the focus of vision, it is difficult to conceive that a large increase of the fluid contents of the eye should not cause any impairment of sight. Of the cases described by Dr. M'Donnell, speaking of the first, he says, "The eyeballs were observed to become much increased in size, and to have assumed a peculiar wild and staring appearance. This alteration, though quite apparent to himself and his family, was unaccompanied by any pain, dimness of vision, or other inconvenience." Of case 2 it is remarked, "The eyesight is very good, though the eyeballs are remarkably prominent, and are unnaturally staring." Of case 3, "In the progress of the disease, the eyeballs became so much enlarged (?) and protruded as to render it impossible to close the eyelids; yet from the beginning she likewise remained free from dimness of vision, or ophthalmia." Of case 4, "For some years past, the eyes had been undergoing a gradual process of enlargement, which both she and her friends were quite aware of, but as her sight remained unimpaired, and she suffered no uneasiness in them, this alteration did not occupy much of her attention." In the three cases described by Dr. Begbie, the condition of the sight is only alluded to in one, and here there was "no dimness of vision." It is, however, proper to state, that in two of the cases the patients complained of distension and uneasiness in the eyeballs, and there would seem to have been some distension of the globe; but in not one of the five cases which have fallen under my observation, could symptoms of hydrophthalmia be detected, and in all, the sight was perfectly good.

The conclusion appears to be, that in the majority of the cases of prominent eyes occurring in anæmic subjects in combination with palpitation and enlargement of the thyroid gland, *the increase in size of the eyeballs is only apparent, and the globes are simply protruded.* In some instances there may be dropsy, but these are the exceptions, and are characterized by pain and distention in the eyes, discoloration of the sclerotic, and hardness of the globes. It is sometimes difficult, even for practised ophthalmic surgeons, to state positively whether the eyes be actually enlarged or merely protruded; but a careful inquiry into the symptoms will most likely lead to a correct conclusion.

Mr. Dalrymple has suggested the following explanation of the phenomenon. The prominence of the eyes is probably due to the operation of two causes: an absence of the proper tonicity of the muscles by which the eyes are retained in their natural positions in the orbit; and some amount of venous congestion of the tissues forming the cushion behind the globes. Such congestions we know to be common in connexion with a feeble condition of the circulating system; but in the cases seen by Mr. Dalrymple, as well as in those in my own practice, the congestion seemed to be confined to the soft contents of the orbit, and not to extend to the eyeballs. That some of the muscles may be in a relaxed, and others in a morbidly excited condition, was well shown in one of the cases under the care of that gentleman, where the eyes, being greatly protruded, were nearly denuded of the protection of the upper lid by a constant and powerful spasm of the levator palpebræ superioris, which drew the lid so far upwards and backwards, that much of the sclerotic above the cornea was visible. This spasm of the levator of the lid is not

uncommon in nervous and hysterical females, and is frequently associated with other irregular muscular actions, as in chorea. The expression given to the countenance by this protrusion of the globes, and the unnaturally elevated lid, is very peculiar, and the aspect is that of the wildest terror.

TREATMENT. In a case of apparent enlargement of the globes, it would be proper, before deciding on the treatment, to ascertain the condition of the heart, the circulation, and the thyroid gland. If there be indications of anæmia, as the bruit in the veins of the neck—if there exist palpitation, and, in addition, enlargement of the thyroic gland, there will be strong evidence in favour of the condition of the eyes being secondary; and this view will be strengthened if the patient make no complaint of pain or imperfection of vision. The most efficacious remedies are, iron, aloes, and myrrh, with sedatives, ablution of the body with cold salt-and-water, followed by friction, and if there be indications of hysteria, friction along the spine with a stimulating liniment. It is desirable from time to time to change the form of the medicines. Three preparations of iron possess peculiar efficacy in anæmia. They agree when the ordinary preparations disagree, and seldom cause pain in the head or febrile disturbance. The following is the most energetic:—Sesquicarbonate of soda, one drachm; tincture of calumba, one drachm; distilled water, an ounce and a half; tincture of the sesquichloride of iron, one drachm. Mix, for a draught, to be taken twice a day. The decomposition which arises causes the precipitation of carbonate and peroxide of iron; whilst chloride of sodium remains in solution, and carbonic acid is given off. When taken, a grateful warmth is usually felt at the stomach, followed by a general glow. The tincture of calumba may or may not be added. It is indicated where there is loss of appetite. This formula, I may remark, is valuable in neuralgia. The preparation next in power is the liquor oxysulphatis ferri, the formula for which is to be found in the *Pharmaceutical Journal* for May, 1842. It is a persulphate of iron, with free nitric acid. From three to twelve drops may be given twice or thrice daily, in water, or infusion of quassia. The third preparation is the tincture of the acetate of iron of the Dublin Pharmacopœia—a mild and very elegant form. Instead, however, of commencing with half-drachm doses, as recommended by some authors, it is better to begin with fifteen drops, and gradually increase the dose. When there is constipation, the aloes and iron pill of the Edinburgh Pharmacopœia is an useful auxiliary to the other medicines. As a general rule, the best time for taking ferruginous preparations is soon after a meal. During the progress of digestion, the assimilative organs are in a state of high activity; and the iron, mingling with the chyme, is introduced into the system with less disturbance and greater effect, than when taken on an empty stomach. A small dose, thus administered, will produce a more powerful effect than double the quantity given when the alimentary canal is in a state of languor. If the iron be taken after breakfast, cocoa should be recommended in preference to tea. The only topical application necessary, is cold water to the eyes twice or thrice a day. Patients are often dissatisfied if something be not recommended; and the bracing effect of the cold appears to be of service in restoring the deficient tone to the weakened parts. [Abridged from the *Lancet* of 26th May, 1849.]

MENINGEAL APOPLEXY IN THE BRAIN OF AN INFANT THREE DAYS OLD.

DR. HESLOP exhibited, at the Birmingham Pathological Society, on the 1st of March 1849, the brain of an infant who died suddenly three days after birth. The mother had been admitted into the General Hospital, under the care of DR. EVANS, as a case of dropsy. Labour came on a few days after admission. The child presented in the first position of Nægelé. From great narrowing of the passages, the second stage of labour was prolonged; but the child breathed and cried vigorously the moment it was born. There was one circumstance worthy of note about the mother's previous condition, namely,

her urine was moderately albuminous. The brain was highly congested; and there was considerable extravasation of blood in the substance of the pia mater. This was particularly observed on the inferior surface of the cerebellum, and in the tuber annulare. The arachnoid cavity contained a large quantity of sanguinolent fluid.—*Prov. Med. and Surg. Journal.*

The occurrence of Meningeal Apoplexy is more common *at*, than *after*, birth. For remarks and statistical details connected with the ages at which Apoplexy occurs, we refer to Dr. R. Quain's valuable memoir, pp. 27-42 of this volume, and particularly to p. 33.

DR. VIGLA ON APROSOPIA, OR CONGENITAL ABSENCE OF THE FACE.

Dr. Vigla, of Paris, has published the following memoir in the *Archives Générales de Médecine* for 1849. We translate the paper entire, omitting only a few unimportant sentences.

Aprosopia seems the most suitable term by which to designate that form of monstrosity in which the face is wanting. Three cephalic organs are necessarily absent in such cases, viz., the buccal, the nasal, and the ocular; the auditory apparatus is present when there is great deficiency of the cranium and encepalon. Isidore Geoffroy-Saint-Hilaire, in his *Histoire des Anom. de l'Organization*, t. ii, p. 430 (1836), describes these monsters under the name of *triocephalia*, being the fifth genus of his family, otocephalia. His father established the genus under the designation of *triencephalia*. Both terms are intended to indicate the absence of three cephalic organs.

"The word Aprosopia has already been adopted by Dugès,[1] Beclard,[2] Laroche,[3] and others; also, more recently, by Otto, in his great work on teratology. It is as follows, that the latter gives the character of faceless monsters: "Class 1, Monstra Deficientia; Ord. 1, M. Perœcephalia: Gen. 4, M. Aprosopa. The face is either entirely wanting, or is very deficient; so, likewise, are the anterior and middle lobes of the brain, or, in the place of them, we may find a liquid. The anterior cerebral nerves are either wanting, or irregular. The third, fourth, fifth, and sixth cranial vertebræ are absent, or perhaps three of them only are wanting; and the third cranial vertebræ resembles what we see in cyclopic monsters. The ears are either united, or in too close proximity to each other. The neck presents a pouch, projecting like a bird's crop,—such as we see in cheekless monsters, to which faceless monsters have many points of resemblance. When the face is imperfect (*microprosopa*), the greater the deficiency in the external parts is, the more altered, or defective, are the brain and anterior nerves."[4]

Aprosopia is very common in the inferior animals, but so rare in man, that Isidore Geoffroy-Saint-Hilaire, writing in 1836, remarked, that he had not seen a case of the kind; nor had he, in the annals of science, been able to discover any authentic instances. Last year, I received a human monster of this description. The dissection was carefully made by me, kindly aided by the counsel and cooperation of MM. Rayer, Blandin, and Gosselin. I am indebted to Dr. Bell, one of the Faculty Librarians, for referring me to a case published by Dr. Otto, which is the only case in the human subject, in addition to my own, with which I am acquainted. Both cases present a complete analogy to the Aprosopia of animals, which is so well known.

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[1] Dugès. Observations de Monopie et d'Aprosopie. (Revue Méd. t. iv, p. 627), p. 419.

[2] Beclard. Mémoire sur les Acéphales, Bul. de la Fac., t. iv. 1844.

[3] Laroche. Essai d'Anatomie Pathologique sur les monstruosités de la face: thèse de Paris, 1833.

[4] Otto (Adolpho-Guilelmo). Sexcentorum Monstrorum Descriptio Anatomica. Vratislaviæ: 1841.

Case I. The following case is from Dr. Otto's work, *Monstra Aprosopa and Microprosopa*, p. 54. The subject was a full-term female fœtus, recently born, and was well formed, excepting in the head, which was very deformed and imperfect, having only a very small cranial base, and wanting the cranial arch and the face. In truth, the brain and the osseous arch of the cranium had almost entirely disappeared, from hydrocephalus; so that the upper part of the head was merely a small cerebral tumour, such as is seen in hemicephalous monsters, having for its only covering a membrane which was thin, transparent, ruddy, bloody, and wrinkled. At the apex of this tumour there was a narrow opening in what resembled a cicatrix, through which a probe could be easily passed into the cerebral matter. There was another and a larger aperture, like a tear, on the posterior surface, which seemed to communicate with the medulla oblongata. The posterior and lateral parts of the heads were covered with an abundant hairy scalp. The face was entirely wanting; but, nevertheless, there existed a small wart-like excrescence in a narrow canal, suggesting, by its form, the idea of a trumpet, or rudimentary nose. Beyond this fleshy mass were two sufficiently well-developed ears, which, though united, had each an opening by a separate cutaneous flap. The neck was short and lank; it did not exhibit any tumour, such as is often met with in the necks of monsters of this class.

Dissection. The anterior part of the brain was found to be entirely deficient: the first six pairs of nerves were wanting; and those which existed were lank. The cerebellum was in its right place. The posterior tear, formerly mentioned, was found to communicate with the much dilated fourth ventricle. The vertebral canal was absent anteriorly, but posteriorly it was developed in excess. At the upper part of the neck there was a sac filled with mucus, and constituting the back part of the throat: in it were found both Eustachian orifices, a little tongue with its hyoid bone, a well-formed larynx, and the œsophageal opening. In the thoracic cavity was seen the thymus gland greatly developed, the left lobe extending to the diaphragm. The most striking circumstance in the disposition of the thoracic and abdominal viscera was, that those which ought to have been on the right side were on the left, and *vice versâ*: the left lung had three lobes, and the right only two: the heart also was on the right side of the body. The venæ cavæ emptied themselves into the left, and the pulmonary veins into the right auricle. The aorta arose from the right ventricle, and after describing its arch, descended along the right side of the vertebræ; whereas the pulmonary artery arose from the left ventricle. The disposition of the abdominal viscera was analogous: as was that of the vessels and nerves of both cavities. These organs were not malformed, excepting the right supra-renal capsule, which was very small and elongated. The left supra-renal capsule was wanting. The cranium was smaller than any I ever saw in a newly born infant: its longitudinal diameter, measured from the occipital ridge to the canal was hardly an inch; its depth, one inch and two lines; and the transverse diameter one inch and three quarters: hence the cavity of the cranium was not so long as it was deep and broad. The basilar process, and both occipital condyles were well formed; but the squamous portion was short, sharply inclined forwards, and perforated in the middle by a hole, through which issued a cerebral hernia. The parietal bones were very small and formed a perpendicular anterior wall to the cranium: their posterior margin (here become superior) formed the anterior boundary of the aperture whence issued the hernia. Between the two parietal bones, there was a bone shaped like a hollow cone, which seemed to be a rudimentary frontal bone, the two portions of which, though joined, were easily distinguished. Beyond this imperfect frontal bone were two temporal bones, intimately united, and having a single tympanic cavity; in this were two mallei, two incudes joined together, and two separate stapes.

Case II. The fœtus which forms the subject of the following history, was born at about seven and a half months, the mother being a young primipara, of good constitution, and slightly lymphatic temperament. The pregnancy seemed natural; and the premature delivery might be owing to an excessive quantity of liquor amnii. This condition was easily distinguished from the commencement of the labour by the bulk of the abdomen, and the peculiar sensation communicated to the finger in vaginal exploration. The membranes were resisting and thick, and till they were ruptured, labour went on slowly. The placenta and umbilical cord seemed natural. The fœtus, which was of the female sex, during the few minutes it lived, performed irregular respiratory movements. Seeing the manifest dilatation of the chest, and the alternate rise and fall of the abdomen, I did not suspect—what dissection revealed—that there was no opening by which air could enter the chest. The pulsations of the heart were slow, feeble, and irregular. Pinching of the skin excited slight movements of the limbs. These various phenomena being regarded by the father as signs of life, he performed baptism. The external aspect of the fœtus was natural in shape and plumpness, except in the head and neck, which joined with one another in such a way, as to make it difficult to say, where the one terminated, and the other commenced. The cranial portion of the head only was present: it was covered with thick black hair, flattened from behind forward, greater in its transverse than in its antero-posterior diameter. The presence or absence of hair was the best external guide, by which the respective limits of the head and neck could be determined. At their point of junction, and at the extremities of the transverse diameter, there were two very large ears, placed obliquely, but sufficiently well formed. At an equal distance from each ear, and in the mesial line, there was a slightly projecting and arch-like fold of skin: it bore a considerable resemblance to a very small rudimentary superior eye-lid, upon which one could distinguish with a magnifying-glass, or even with the naked eye, yellow points, suggesting, by their arrangement in longitudinal striæ, that they were the Meibomian glands. When this cutaneous appendix was pressed between the fingers, it communicated the sensation of being something analogous to tarsal cartilage. Beyond this cutaneous fold the skin was red, and appeared as if excoriated and deprived of its epidermis on a surface as large as that of the eye-lid, being a little less than a centimètre at the middle, and somewhat more at the two sides, which became elongated like drops, the right side more than the left. Examination by the touch, and by the magnifying-glass, demonstrated that the excoriation was only apparent; and that what had this appearance was more like mucous membrane. Beyond what has been described, there was nothing which could be regarded as rudimentary facial organs. Under the skin of the neck could be felt a movable larynx.

Dissection. *Abdomen.* There was meconium in the intestines. There were two small supra-renal capsules. Fat was abundant. The viscera were natural as to their position, shape, and bulk. *Thorax.* The thymus body presented nothing remarkable in volume and texture. The lungs, heart, and great vessels, were natural. *Neck and Pharyngeal Cavity.* Air, or fluid, injected into the inferior end of the œsophagus, returned by the trachea, and *vice versâ*. If opposition were made to the return of what was thrown in by either passage, the skin of the upper part and the neck was raised, and the rudimentary eyelid became prominent; but no air or fluid escaped by the palpebral sulcus, or by the auditory foramina. By this experiment was proved the existence of a pharyngeal cavity having no external outlet. The pharynx, larynx, and adjacent structures, having been detached without disturbing the osseous parts at the base of the cranium, the following observations were made after the pharynx had been longitudinally laid open. The larynx and the superior lateral and the inferior portions of the pharynx were small, but well formed: the anterior wall—and this is the striking fact—was quite

closed, and did not open into the mouth. This anterior wall was truly the anterior half of the tongue, raised up perpendicularly, and continuous superiorly with the pharynx to which it closely adhered, although the limits of each were well defined. The V, formed by the lingual papillæ and the other peculiarities of organization, apparent on the surface of the tongue, were easily recognized. At the upper part of each lateral wall of the pharynx, there was an obliquely-placed oval opening, communicating with the middle ear: they were obviously the orifices of the Eustachian tubes. At the lower part, and between the two folds of the mucous membrane, there was a conglomeration of minute glands, and of the pillars of the arch of the palate: of the palate itself there was no trace. The muscular portion of the larynx, pharynx, and tongue, was not less developed than their mucous membrane. The hyoid bone and its appendages, as well as the epiglottis and laryngeal cartilages, were perfect. The anterior portion of the tongue was wanting. There was apparently no trace of the mouth or nasal fossæ. *Contents of the Cranium and Vertebral Canal.* The encephalon was remarkable for its small size. The medulla oblongata, pons varolii, and cerebellum, were more developed than the brain, which consisted of a single lobe, destitute of convolutions and median fissure. There was a considerable quantity of fluid between the encephalon and its membranes. Within the cerebral lobe, there was a single cavity, with smooth sides, large in proportion to the solid mass, and communicating freely with the fourth ventricle, which presented a more complete degree of organization. The encephalic substance, especially the brain proper, was very soft, so that the anatomical examination was difficult: it had not been possible to treat it previously by alcohol. The olfactory and optic nerves were wanting. The three branches of the fifth pair were well developed. We thought that we recognized the sixth pair, but what we saw may possibly have been the third or fourth. However that may be, it is certain that only one of these three pairs of nerves existed. The facial, auditory, pneumogastric, glosso-pharyngeal, spinal, and hypoglossal nerves, could be traced to their exit from the cranium. The spinal marrow, and nerves arising therefrom, were regular in their development, and natural in their size, as estimated by the volume of the organs to which they were distributed. *Skeleton of the Head.* The bony wall of the cranium, completed by membranes, completely enveloped the encephalon: the fontanelles were extremely small; and that one which naturally exists at that age, at the union of the frontal with the parietal bones, was almost entirely wanting. The bones of the base of the skull were united by means of membranes. The occipital bone was one of those most developed, especially in the portion above the protuberance; it presented a degree of enlargement contrasting with the flatness of the frontal, and which, at first sight, caused it to be taken for the latter. It was formed of six distinct, but intimately united pieces. The occipital foramen and protuberance, and the anterior condyloid foramina, were perfectly developed. The frontal bone was atrophied to such an extent, that its size was not a third of that of the occipital; it was formed of a single piece. The vertical portion was flattened, of a triangular form: the greatest border was placed inferiorly, and the angles were rounded. The horizontal part, reduced to a thin edge, presented a rudimentary orbitar ridge, situated on the median line. This was reduced to a small navicular fossa, measuring fifteen millimetres in its transverse, and five in its antero-posterior diameter. The other points observed in the complete configuration of the frontal were in vain sought for; and there was no indication of the primitive separation of the bone into two symmetrical portions. The development of the parietal bones was in proportion to that of the occipital. The sphenoid bone was well formed in its posterior part, at its junction with the occipital: anteriorly, an irregular tubercle completed, with the posterior portion, an imperfect sella turcica, and was articulated with the frontal, without the intervention of an ethmoid. The greater wings were present, but unsymmetrical, irregularly

and coarsely marked, and had distinct articulations with the frontal, parietal, and temporal bones. There were no lesser wings, nor pterygoid processes. There was no discoverable rudiment of an ethmoid bone. The temporal bone was the most developed; but its development was not equal in all parts of the bone. 1. In the squamous portion, the zygomatic process was absent, and was represented only by a small bony tubercle. The glenoid cavity was also wanting. 2. The mastoid portion was complete, though small. 3. The petrous portion was as well developed as is ordinary in a well-formed fœtus; and this bore a relation to the size of the auditory nerve, and the state of the external auditory apparatus. The structure of the internal ear was not examined; but it probably would have presented no irregularity. There was a small styloid process.

The skull, examined as a whole, departed little from the normal condition in its posterior portions, but was very imperfect in its anterior fourth, owing to the absence of the ethmoid and lesser wings of the sphenoid, and the incomplete state of the frontal and greater wings of the sphenoid. The face was completely wanting, and with it the bones which exclusively belong to it,—the superior maxillary, palate, malar, nasal, and lachrymal bones, the inferior turbinated bones, the vomer, and the inferior maxillary bone. It would, perhaps, be proper to regard the ethmoid, which was absent, as a bone of the face rather than of the cranium. With regard to the bones which specially belong to the cranium, we find that the parietal and occipital bones alone do not form any part of the face; they belong exclusively to the cranium, and hence were better developed. The others were imperfect, in proportion as they formed part of the skeleton of the face; and the analysis of this case gives aid, by a natural process, in distinguishing the cranial from the facial portion of the skeleton of the head.

TREATMENT OF CHOLERA IN THE PARISIAN HOSPITALS.

In our last number, p. 569, we gave a detailed account of the treatment of Cholera pursued in seven of the Parisian hospitals; we now give the following in continuation.

Salpetrière. The severity of Cholera in this institution, together with other circumstances, invest the treatment there employed with a high degree of interest. Its population is one *sui generis*, being composed entirely of men; they are either old men, or infirm subjects, labouring under chronic diseases or epilepsy, or insane persons, all being in a most unfavourable state of health; and the great number of inmates, amounting to 5000, tends to favour the progress of disease. These untoward circumstances have been, however, in some degree neutralized by the healthy arrangements of the institution, especially in the new parts of the building, and by the ability of the medical staff. The Salpétrière being in a healthy situation, cannot be considered as in itself favourable to the spread of an epidemic.

The treatment mostly consists of excitants, astringents, and narcotics; and Cholera is mostly considered as a disease *sui generis*, exhibiting special causes, indications, and alterations, and demanding a special treatment.

M. Natalis Guillot employed, at the commencement of the epidemic, calefacients and excitants, hot air baths, tea punch, aromatic infusions, etc. He has since renounced this method, not because it did not seem good and based on rational principles, but in the hope of finding a better if possible. The following are the modes of treatment which he has successively adopted.

1. The treatment which M. Guillot has most frequently employed, consists of laudanized rice, cataplasms to the abdomen, enemata with diascordium or rhatany, and hot air baths, in the algide cases. This treatment has seemed to him sufficient in ordinary cases. Sometimes he has confined himself to a more simple treatment, consisting of cataplasms to the abdomen, and enemata

of marshmallow-water. But in the more severe cases he has found it necessary to have recourse to more active treatment, the nature of which is as follows.

2. Hot air baths; stimulating mixture, composed of julep, 125 grammes; sulphite of ammonia, 2 grammes; a spoonful every ten minutes. An injection, containing a quart of marshmallow-water with a gramme of sulphite of ammonia, to be injected every half-hour; or a large enema, with 4 grammes of sulphite of ammonia, to be forcibly injected into the intestine every hour. Cataplasms are in all cases applied to the abdomen. M. Guillot says that the sulphite of ammonia has seemed to him highly beneficial, both in arresting diarrhœa, and in acting as a powerful diaphoretic, like acetate of ammonia. He was led to employ this remedy, from the reflection that, if Cholera be produced by a sort of fermentation, the sulphite of ammonia, which has the property of arresting ordinary fermentation, even in very small quantities, should exert some influence on Cholera. This idea was communicated to him by M. Pelouze.

3. M. Guillot has also, from the commencement of the epidemic, employed the preparations of mercury. He administers, every ten minutes, half a centigramme of calomel, with two grammes of sugar. Generally when this has been continued about two hours, the gums become affected; and as soon as this is observed, the calomel is omitted. In this way, the patients sometimes take as much as four grammes of calomel in a few hours. Gum or rice water constitutes the remainder of the treatment. The most constant effect of this method, is the almost immediate arrest of the diarrhœa, without the necessity of having recourse to injections; and M. Guillot has obtained good effects from it in some apparently hopeless cases. It appears to him successful only in young persons; and to have no effect on the aged. Intense salivation has only occurred in persons aged upwards of forty years. M. Guillot has also employed smaller doses of mercury; the effect has been slow, but the action of the calomel, although less powerful, has been beneficial. This treatment is not new, but borrowed from the English physicians, and especially from Annesley, who employed it largely in 1831. M. Guillot has also resorted, in some cases, to mercurial enemata, composed of a gramme of mercurial ointment rubbed up with marshmallow water. These enemata have produced excellent effects on the diarrhœa.

General bleeding, or local depletion from the anus or epigastrium, cupping to the abdomen, or behind the ears, have been sometimes employed, but only as adjuvants, in plethoric and robust persons, and in cases of cerebral congestion. Baths have appeared very useful; but more so at the commencement of reaction than in the algide stage. Baths with mustard have been employed in the latter; but without good effect. Soap-baths have been commonly employed at the commencement of reaction.

M. Guillot is of opinion, that no one method of treatment can be laid down, in a general manner, for Cholera; but certain apparently distinct classes of methods appear to produce the same beneficial results. Thus all his modes of treatment, however varied, have always been employed with the object of restoring warmth to the patients, promoting reaction, and arresting diarrhœa and vomiting. Careful watching of the patient is most important; and if the medical attendant could be constantly present, it might be possible to seize the most favourable opportunities of modifying the treatment. Thus, depletion from the anus, or from a vein, made precisely at the time of reappearance of the pulse, have appeared to produce excellent effects in some cases, in which, a short time before, one has scarcely cared to prescribe it. Cases of diarrhœa which have obstinately resisted treatment by rhatany injections, have yielded almost instantaneously to enemata of mercurial ointment; and *vice versâ*. Some patients who had been treated with rice ptisan and laudanum, have received marked benefit from the substitution of Seltzer water with gooseberry syrup; and others, who have experienced no good effect from medicines, have obtained a sudden amelioration by being plunged into

a bath. The efficacy, then, of the treatment of Cholera, laying aside the extreme severity of some cases, appears to M. Guillot to depend chiefly on the perspicacity of the physician, and on the ideas which may be suggested to him at the bed-side of the patient. In general, the successful cases have become more numerous since the commencement of the epidemic. The progress of the disease is even slower than that of convalescence.

A few observations remain to be made on the attempts to treat Cholera on homœopathic principles. At the commencement of the epidemic, when the severity and mortality of the cases were very considerable, the administration of the hospitals, under the direction of the Minister of the Interior, consulted a commission of physicians on the opportunity of making some trials of homœopathic treatment. The commission replied, that homœopathy did not constitute a special art; that, consequently, they had not to defend nor to prescribe the use of medicines in any particular doses; and, that any treatment might be employed, and any medicines administered, and in any doses, which appeared proper. M. Guillot thought it his duty, under the severity of the circumstances, to make a trial of homœopathy. Acting on his own responsibility, he placed under the care of a homœopathic practitioner, seven of the most desperate cases, which appeared likely to receive no benefit from the ordinary modes of treatment. To these seven patients were administered, on the same day, arsenic, nux vomica, carbon, and bryony, at the twentieth degree of dilution. The next day they had all died. The experiments were pushed no further. They tended to show, on the one hand, the inefficacy of the homœopathic treatment; and on the other, the liberality with which it would have been adopted if found successful. M. Guillot acknowledges, with pleasure, the zeal and devotion with which his homœopathic colleague attended to his experiments.

M. Guillot has also employed hachisch and chloroform; but the results have not been satisfactory enough to warrant their continued use.

M. Barth employs three forms of treatment, either separately or simultaneously, according as certain phenomena of the disease exclusively predominate, or are simultaneous and of equal intensity with others.

1. For vomiting and diarrhœa, whether in the simple or prodromic form of the latter, or in the proper evacuations of cholera, M. Barth at first almost exclusively employed astringents and opiates, if the symptoms presented little severity. His treatment consisted of opiate enemata, and rice ptisan, with syrup of quinces and laudanum. But having soon discovered the inefficacy of this treatment, he has since adopted the use of nitrate of silver, administered in mixtures to arrest the vomiting, and in enemata to restrain the alvine evacuations. In the first case, he has given nitrate of silver in the proportion of 5 centigrammes to 125 grammes of distilled water: in the second, he prescribes enemata containing from 15 to 20 centigrammes of nitrate of silver in distilled water. He has observed, that the nitrate of silver was generally well borne when administered internally, except in some cases in which the patients rejected the medicine immediately, each time it was administered. In the greater number of cases it promptly arrested the vomiting. The enemata have appeared to produce no inconvenience; and he has, by their means, almost always succeeded in arresting the diarrhœa, if not on the first, on the second day; and it has rarely been found requisite to continue them beyond this period. He now almost constantly employs these injections, to the exclusion of opiate enemata, both in cholerine and in confirmed Cholera. Efficacious as this treatment has appeared, it is proper to mention that it by no means secures the patient from a relapse. Among other cases, in illustration, may be mentioned that of a woman who was a third time attacked with copious diarrhœa, after having been twice treated by the above method.

2. In the algide stage, M. Barth has successively employed two methods,

which appeared to him capable of acting in a special manner on the state of the blood. These means are, hachisch and salines. He has administered hachisch in the form of alcoholic extract, in doses of 15 centigrammes, rubbed up with yelk of egg. Salines have been given in mixture, containing 15 grammes of common salt, 30 grammes of syrup of poppies, and 30 grammes of mint-water; and in enemata, containing 15 grammes of salt dissolved in water.

3. To excite re-action and the perspiratory function, M. Barth prescribes the following diaphoretic mixture:— mint-water, 30 grammes, spirits of balm, 30 grammes; acetate of ammonia, from 10 to 15 grammes; syrup of orange-peel, 15 grammes; ether, a few drops.

In the period of reaction, M. Barth employs, according to the indication, one or more bleedings, and cutaneous revulsives.

M. Falret, after having tried, at the commencement of the epidemic, the methods commonly employed, such as punch, ice, mustard baths, etc., without marked success, now has recourse to the same method he employed in 1832, at the Salpêtrière, and at the Grenier-d'Abondance in conjunction with M. Rostan.

In cholerine, as well as in the prodromic period of Cholera, when the symptoms are slight, M. Falret confines his treatment to rice water or aromatic infusions with laudanum, and starch enemata. When the disease is more pronounced, he prescribes opiate injections. If these means fail in arresting the diarrhœa, he employs rhatany injections; and if it be still obstinate, he administers enemata containing 15 centigrammes of nitrate of silver, which seldom fail. In cases where the diarrhœa is, from the commencement, of great intensity, he at once has recourse to this method. When the diarrhœa is accompanied by nausea, he adds to the preceding remedies some of the potion of Rivière. If the disease manifest itself with a certain degree of intensity, he judges it necessary to employ perturbative means; he then prescribes an emetic of ipecacuanha. He endeavours also to restore warmth to the patients, if they have begun to become cold, and employs sanguineous depletion if there be symptoms of local congestion. M. Falret has sometimes employed calomel to the amount of 7 or 8 grammes, in doses of from 35 to 40 centogrammes (from 5½ to 6 grains), and emollient cataplasms to the abdomen. This latter remedy, of which the good effects have been established by other practitioners as well as M. Falret, when the abdomen is the seat of more or less intense pain, has been replaced advantageously, in some cases, by the application of a copper vessel, such as forms part of the fumigating apparatus of hospitals, filled with hot water. This vessel, drawn over the abdomen and placed alternately on the painful parts, has been found of great efficacy in allaying the pains and that painful sensation of epigastric constriction which the patients so often experience. In confirmed cholera, M. Falret employs the same, or rather analogous means, but in a more active and persevering manner. These remedies consist of sinapisms moved over the body; mustard baths; sometimes bottles of hot water moved all over the body, and even on the neck, so as to act as near as possible to the nervous centres; friction, either dry or with alcoholic and aromatic liniments; and ethereal potions, or stimulating mixtures containing from 15 to 20 grammes of acetate of ammonia, and from 20 to 25 drops of laudanum. He also sometimes employs other means, proper for certain special indications. For example, in the organic stage, he sometimes practises depletion to 1 or 2 ounces twice or three times in the day. When the potion of Rivière fails in allaying vomiting, he has recourse to a solution containing 5 centigrammes of nitrate of silver. In obstinate vomiting, ammoniacal blisters have succeeded better than the remedies just mentioned. To allay the diarrhœa, he employs rhatany injections; and, in the most obstinate cases, injections of nitrate of silver. Cramps have been treated by dry frictions, sinapisms, and

by the applications of compresses wetted with chloroform and left on the part for twenty minutes. The latter remedy has sometimes caused the prompt cessation of the cramps. On two occasions, M. Falret has tried the sesquichloride of carbon at the commencement of the algide stage: it appeared very beneficial in one case, that of a young insane person. Reaction took place under the influence of this medicine with great rapidity. In the period of reaction, general and local depletion, to the anus, or near the head, has been employed with some advantage. Wine of quinine has been given as a tonic during the period of convalescence, and the diet has been cautiously regulated. M. Falret considers copious sweats as the most common of the critical phenomena; and he has observed them to be in direct relation to the quantity of opium administered; they have been especially abundant after the administration of laudanum. As regards drink, M. Falret is of opinion that it should be very hot at first, but as soon as thirst becomes intense and there is repeated vomiting, he substitutes ice and Seltzer water.

M. Falret has noticed a circumstance, which might be of some value if it were equally remarked in the other wards containing insane persons,—that, in his division the greatest proportion of the patients are those affected with melancholy and depression; those who habitually, and with more or less obstinacy, refuse food; and those who have been a considerable time in the establishment.

M. Mitivié. The prodromic period is considered by M. Mitivié as one of great importance. Hence he has greater confidence in the remedies employed at this period, to combat the premonitory diarrhœa, and the saburral state, cephalalgia, vertigo, *courbature*, etc. His most usual remedies, in such cases, are emetics, or rather, emeto-cathartics; he gives ipecacuanha, followed by Seidlitz water; or rather, if the saburral state be strongly marked, an emeto-cathartic of tartar-emetic with sulphate of soda. In some cases, he has followed this by a bleeding. This practice has appeared to him sometimes successful in arresting the premonitory symptoms, and preventing them from degenerating into severe Cholera.

In confirmed Cholera, when the patients are cold, M. Mitivié employs the ordinary calefacient means: hot air baths, bottles of hot water, bags of hot sand, etc.; dry frictions, or frictions with turpentine, camphorated brandy, ammoniacal liniment, or dry or aromatic vapours. Sinapisms are applied to the extremities, both as calefacients and as derivatives; and, at the same time, they allay cramps. These are also treated with emollient and laudanized fomentations, and have been sometimes made to cease by the local application of chloroform. In one case, the foot of the patient had been wrapped in linen cloths dipped in chloroform; the cramps soon ceased; but the patient retained an icy sensation in his foot, with numbness and feeling of weight. The next day, the foot was swollen, red, and painful. These symptoms have disappeared under the use of emollient applications; but there is still some loss of sensation. Diarrhœa has been treated by enemata of starch and laudanum, with decoction of rhatany, ptisan of rice water, rhatany mixtures, pills of opium, or gummy extract of opium in some julep. In vomiting, M. Mitivié commonly employs Seltzer water, aromatic drinks being most frequently rejected by the patients. Three or four times he has tried the infusion of stachys, but the patients have not been able to retain it. He attends to the feelings of the patients, who generally prefer cold to hot drinks; hence he gives them Seltzer or Vichy water, acidulated water, or even ice. Some individuals have a desire for strongly acidulated drinks; and one patient recovered, without having had any other remedy than citrons to suck. The feeling of anxiety at the epigastrium is treated by sinapisms and an opiate plaster. M. Mitivié has tried water impregnated with salt, but soon renounced it, finding it inefficacious and difficult of administration.

The patients are so disgusted with and opposed to it, that they not only refuse it, but any other drink which may be offered to them. For the same reason, he has for the most part renounced the use of ammoniacal or laudanized drinks, for which he now generally substitutes Seltzer or Vichy water, or water impregnated with citron. In the period of reaction, M. Mitivié has sometimes employed, with apparent success, leeches and general bleeding, especially when the symptoms of reaction have been intense, with threatening of cerebral congestion. But this treatment has not seemed to him equally successful when reaction has produced coma, delirium, and injection of the conjunctivæ. He has in this case sometimes given emetocathartics, but not with such marked success as in the prodromic period.

M. Lélut. The treatment employed by M. Lélut consists of diffusible stimulants, to promote reaction, and of astringents, to restrain the alvine evacuations. After administering a hot air bath, or a water bath at a temperature of from 108° to 120° Fahr., if the patient be cold, M. Lélut prescribes tea, or hot aromatic infusions with acetate of ammonia; and when reaction has commenced, he supports it by coffee or champagne. Opium is administered only occasionally and in small doses, and only when it is indicated by severe cramps and pains, for fear of cerebral accidents. To allay the diarrhœa, M. Lélut at first used rhatany enemata; but this not answering his expectations, he has adopted the use of injections of nitrate of silver; and he now employs this remedy at the commencement of the disease, as well as in confirmed Cholera, with general good effect. When the patient is in danger of asphyxia, M. Lélut employs small bleedings. At the same time, he has tried the effect of mixtures and enemata containing salt; but it is difficult to say whether they have had any good effect. In the period of reaction, he employs copious depletion, repeated as often as is indicated by congestive or comatose symptoms. At the commencement of the disease, M. Lélut has sometimes had recourse to an emetic, consisting of a gramme of ipecacuanha and five centigrammes of tartar emetic. This remedy has appeared especially indicated when the patients, being in the cold stage, have been tormented with nausea and with ineffectual efforts to vomit. He excludes purgatives, considering them to be indicated at no period of the disease.

M. Trélat at first employed the ordinary external calefacient means; and has since tried other modes of treatment, such as emetics and the mercurial method. But having found none of these to answer his expectations, he has returned to the stimulant method, to which he has determined to adhere. The most common stimulants which he employs, are white wines, especially champagne, which he prescribes in general for all his patients, either concurrently with, or after the administration of hot stimulant and diffusible drinks.

M. Baillarger employed, at the commencement of the epidemic, tea-punch, a mixture containing acetate of ammonia, mint water, alcohol, and ether; laudanized enemata; and externally, sinapisms, and frictions along the vertebral column with camphorated brandy. Almost all the patients thus treated at the commencement of the epidemic, perished, generally in from eight to ten hours. Having observed unexpected good effects from the saline treatment in a melancholic patient, forty-five years of age, he has since employed it, to the exclusion of the stimulant method. He omits the enema, and gives a mixture containing 12 grammes of chloride of sodium, 125 grammes of mint water, and 40 grammes of syrup of poppies. With this he employs strongly laudanized enemata, frictions along the vertebral column, and sinapisms. This treatment has been successful in some very severe cases, and has appeared to have the advantage of bringing about a moderate reaction. This mixture is never continued beyond one day; but it is often suspended sooner if reaction be established. He afterwards gives Seltzer water,

small quantities of ice, etc. In some cases, blisters to the epigastrium have been found very useful in allaying the sense of oppression, which often forms one of the most distressing symptoms. When comatose symptoms supervene, (which appear in general so gradually as to allow time for treatment,) M. Baillarger prefers successive abstraction of blood, by means of leeches, to the application of a large number at once. At the same time, he prescribes blister to the inner part of the thighs. M. Baillarger is of opinion that large sinapisms on the præcordial or epigastric regions, or on the limbs, should only be used with great caution, especially in young and nervous subjects. When once their action is produced, they produce, or appear to produce and maintain, extreme irritation. In a young girl of eighteen years of age, the vomiting continued for three days, in spite of the use of ice, Seltzer water, potion of Rivière, opium, and finally, a blister to the epigastrium. They yielded, as if by enchantment, to the use of trisnitrate of bismuth, in doses of half a gramme every half-hour (M. Monneret.) According to M. Baillarger, the good results observed have in part depended, in six or seven cases, on frictions along the vertebral column. He does not think that these frictions have been sufficiently employed.

M. Baillarger was one of the first who tried the effects of *stachys* or *teucrium*; and he is now among the few who persist in attributing any efficacy to it. He considers its action superior to that of indigenous stimulants, and different, inasmuch as it has the advantage of being astringent, as well as stimulant and diaphoretic. He has completely succeeded in rapidly checking the premonitory diarrhœa; and also diarrhœa which had for several days resisted opium and astringent ptisans. The most remarkable effect which M. Baillarger has observed to result from the administration of teucrium, is copious perspiration. This diaphoretic property of the teucrium, joined with its astringency, appears to him to constitute one of the chief advantages of this remedy. Having observed that the concentrated dose of teucrium was so bitter as to be disagreeable to the patients, and sometimes to induce vomiting, M. Baillarger has succeeded in determining the dose which can be most easily borne by the patients, and at the same time be efficacious. He gives 10 grammes of teucrium in a quart of sweetened ptisan.

M. Manec has employed external and internal stimulants, with the exception of baths and vapour douches. Among the diffusible stimulants, acetate of ammonia is that which has appeared to him to produce the best results; but he does not confine himself to this remedy. Considering Cholera to be engendered by electric influences, he administers sulphur in all possible forms,—in mixtures, in enemata, in friction, and in suppositories. In mixture, he gives from 60 to 80 grammes of flowers of sulphur, in 500 grammes of gum mixture, or some other vehicle. The enemata contain hyposulphate of soda. Frictions are made with sulphurated pommade; and suppositories of sulphur, with some substance of proper consistence, are placed in the rectum. In accordance with the same view, he places plates of glass under the feet of the bed, to isolate the patients. Since the 7th of April, when he commenced this plan, only one spontaneous case of Cholera has occurred in his wards. On the patients brought in, labouring under Cholera, this system appears to have no effect. In a case of intense cyanosis, he applied electricity, by Clark's apparatus, but without success.

ANOMALOUS STRUCTURE OF THE OVARIES.

Professor Rokitansky relates the following remarkable case of monstrosity of the internal generative organs. It affords an additional confirmation of the ovarian theory of menstruation, but seems to indicate that sexual instinct may exist independently of the development of these organs.

On the 26th of December, 1847, a judicial examination was made of the body

of a woman, aged 61 years, who had died suddenly. She had been twice married, and had never menstruated nor borne children, but was the subject of a sexual desire, which, even in advanced age, was a source of inconvenience to her. The autopsy revealed the following appearances. The body was of moderate size, corpulent, having altogether the conformation of that of a woman. The breasts were large, the external sexual organs largely developed, the labia pudendi and clitoris large, and the vagina capacious. The dura mater was infiltrated, and of a congested appearance: and the vascular points, seen on section of the brain, were, in some parts, as large as a hemp-seed, especially in the right hemisphere. A drachm of serum was contained in the ventricles. The lungs were congested and œdematous. There was hypertrophy of the left ventricle of the heart; the bicuspid and aortic valves were thickened and contracted, and both orifices were narrowed. The liver was bound down by adhesions, and the intestines and omentum had grown together; they were both congested. The spleen was flabby and small. In the stomach there was a quantity of chyme, and some brownish-yellow fæculent matter in the intestines. The kidneys were covered with much fat, and the bladder was contracted and empty. The mesentery contained fat.

The sexual organs presented an interesting appearance. The upper part of the pelvis had a tumour projecting into it, which was diagnosed to be a fibrous tumour of the uterus; and a vessel, resembling a vesicula seminalis, was observed passing up from the inguinal canal, on the lateral wall of the pelvis. It was visible through the peritonæum, which it raised into a small duplicature in the vicinity of the uterus; it had a narrow zigzag course. It appeared to be the anterior spermatic artery, forming an extended insular space on the right lateral wall of the pelvis, but entering, singly, into a vascular plexus, situated on the cornu of the uterus. With this vessel, there passed into the inguinal canal a delicate bundle of muscular fibres from the internal oblique muscle, a branch from the genito-crural nerve, the external spermatic nerve, and some aponeurotic fibres. On the cornua of the uterus there existed, covered with a process of peritonæum, folded several times on itself into the form of a slightly lobed pouch, a plexus of veins; and below, and to the external side of this, was an uneven, slightly lobed or glandular structure, resembling, at first sight, an ovary. On the right side also, within this plexus, there was anteriorly a small cylindrical sac, with a delicate envelope, about the size of a pea, moderately filled with fluid. Each of the ovariform bodies presented, on section, within a delicate fibrous envelope, a pale yellowish-white stroma, in which there lay some more or less round yellowish bodies, of about the size of a pea, and more defined than the stroma. When removed from the stroma, they appeared, both externally and on section, to be made up of a convolution of small vessels, serving to remind one of the seminal vessels: but further examination corrected this view. These bodies were easily resolved into larger or smaller portions, and could be unfolded with great ease, under water, into a striated membrane, partly formed of areolar fibres, partly structureless, which the naked eye could perceive to be covered with a network with large meshes, consisting merely of areolar fibres. There was no trace of canals, nor of adipose tissue; nor was there any trace of fat in the stroma. There was not the least appearance of Graafian follicles. The small sac above mentioned, contained a pretty clear yellowish fluid, in which, together with nucleated structures, some oblong and others elongated like a staff, there was found perfect ciliated epithelium. In the wall of the uterus, on the right side and posteriorly, there was situated a thick, fibrous tumour, of about the size of a man's fist, pushing the cavity of the uterus towards the left. The cavity was small; the cervix uteri and the vaginal portion were also rather small. There was no trace of an orifice of a Fallopian tube. The neck of the urinary bladder was surrounded with a ring of about one and a half line thick, of parenchymatous matter, which, on closer examination, was found to resemble the prostate in structure.

The nature of this singular irregularity of the sexual apparatus is self-evident. The muscular fibres from the internal oblique, entering with the spermatic artery, with the external spermatic nerve, as well as the rudimentary prostate, denoted the male type. The ovariform bodies were neither ovaries nor testicles. On the one hand, they presented some appearance of division into stroma and follicles; while, on the other hand, they presented a structure calling to mind that of an arrested testicle, while the cellular bodies contained in them might be considered as arrested or atrophied vesiculæ seminales. The small sac observed on the right side, with its ciliated epithelium, was evidently the rudiment of a Fallopian tube: it calls to mind the blind tubes found in imperfect development of the uterus.—[*Zeitschrift der K. K. Gesellschaft der Aerzte zu Wien*, 1849, p. 329.]

OBSTETRICS.

OVAL BOX-WOOD PESSARY IMPACTED WITHIN THE VAGINA FOR TWO YEARS; INGENIOUS METHOD OF ITS REMOVAL BY MEANS OF A JOINER'S GIMLET, AND FORCEPS.

Mr. Jesse Leach, of Heywood, Lancashire, has published the following instructive case. Mrs. W., aged 60, married, but without children, about two years ago consulted a practising empiric, for general debility and tenesmus during urination; for which he advised the use of a pessary, and prevailed upon her to allow him to introduce one, which he did with some difficulty. Her existing symptoms became subsequently much aggravated, with additional weight, heat, pain and uneasiness about the loins and vagina, with a constant dribbling away of urine. She applied again to her adviser, and requested him to remove the pessary. He tried to do so by adopting different expedients, but after fruitless efforts for the space of two hours, he gave up the task, and coolly assured her she need be under no apprehension, as the pessary in a short time would rot away, without the slightest injury to her. She still hoped that time would remove what her adviser could not. However, her general health became more alarming; and among other practitioners, she consulted my brother, Mr. R. H. Leach. He found a pessary so firmly wedged in the vagina that he could not remove it with his fingers.

On the 1st of September 1848, I visited her with my brother. She had a care-worn countenance, was dejected in spirits, had cough, disordered digestion, incontinence of urine, much emaciation, and debility. The sphincter ani was paralysed. The mucous folds of the rectum were relaxed and much congested. The pessary could be distinctly felt through the rectum in the vagina. The perinæum was rigid, and thus, though I could move the pessary within the vagina, prevented extraction. The lower orifice of the vagina was very small. The woman was now placed upon her left side and her shoulders slightly elevated; the vagina was well lubricated with lard. Two fingers of the left hand were passed into the rectum behind the pessary and traction thereby made, whilst the index finger of the right hand, which was with difficulty passed within the vagina behind the pessary, acted as a second tractor. In this way the pessary could be brought to the lower part of the vagina, but the small outer orifice and rigid perinæum would not allow its broad diameter to pass. Scoops, a small vectis, and various other means were then tried without success. Perforation or crushing were now the only expedients. We thought it probable that the best perforator would be the joiner's gimlet; and as the pessary was hollow and made of box wood, perforating with a gimlet would most probably fracture the pessary and allow the segments to be removed by a forceps. My brother brought the pessary as low as he could by two fingers, introduced behind it within the rectum, and steadily held it fixed against the perineum and outer orifices of the vagina with his right hand, protecting the soft parts by means of a towel,

whilst I perforated it with a gimlet. On the groove of the gimlet, behind the worm, passing within the hollow of the pessary, its walls fractured into three segments, which were brought away with a forceps. Granulations had formed on the cervix uteri, and had passed within the opening usually left for a pessary tape; they were torn during extraction, and found within the hollow of the pessary. The woman did well.

I am not aware that the gimlet has been tried before in such a case; but it effectually answered my purpose.

DR. TYLER SMITH'S NEW METHOD OF TREATING STERILITY.

In our last number (p. 590) we laid before our readers Dr. Tyler Smith's Essay on *Removal of Obstructions from the Fallopian Tubes by Catheterism*: and we stated that we had seen the instrument introduced by Dr. Smith, with great facility, into the unopened uterus. We should also like to see *the operation performed on the dead body—the uterus being in situ*; and we think till this be done, and the catheter cut down upon, and found within the tube —both tube and uterus being uninjured—the preliminary objections of Dr. Tilt and others cannot be set aside. The practicability of the operation cannot be *demonstrated* on the living body. Dr. T. Smith has, since we last

wrote, made a second communication to the *Lancet* (June 9th, p. 604), from which we make the following extract:—"But we find in practice that in the great majority of cases of Sterility, there is a good state of health, the uterine secretion appears regularly, and there is neither appreciable pain nor disease in any of the reproductive organs. The mere absence of childbearing, all the conditions of fertility being apparently present, is the only symptom. This is, in fact, a reason why a vast number of cases never come under medical treatment at all. I submit, that in these cases of good health combined with sterility, the defect can only arise from some mechanical impediment, such as may be remedied by Fallopian catheterism. We sometimes see these cases, after years of barrenness, suddenly, and without any apparent cause, give way, and the subjects of them bear children. Such cases are, I have no doubt, cases of Fallopian impediment, relieved, at length, by accident, but which might have been remedied long before by art. In many cases, this form of sterility continues unrelieved, until after the decline of menstruation, when childbearing is impossible. I have no doubt I shall be able, hereafter, to publish numerous cases of success by my method. But sterility is not like blindness or deafness, in which the result of an operation is seen at once. Time is required, even after the removal of all impediment. At present, the time which has elapsed since I first performed the Fallopian operation upon sterile subjects, is not sufficient to show the results; but I have already had one case, in which, after several years of sterility, impregnation took place, but which was followed by abortion at the third month.

"The woodcuts before the reader give a front and a side view of the vagina, uterus, and Fallopian tube, with the instruments used in the operation, in situ. They convey a better idea of the operation than the former representation of the instruments alone."

ATMOSPHERIC PESSARIES.

Our continental neighbours are bent, as well as our friends beyond the Tweed, on rendering atmospheric air subservient to uterine manipulations. M. Garcil lately presented to the Academy of Sciences of Paris, a pessary made of caoutchouc, of about an inch in diameter, which, by insufflation, may be made to reach a diameter of three inches.—*Lancet.*

TOXICOLOGY.

DETECTION OF CHLOROFORM AND ETHER IN THE BLOOD.

To detect Chloroform, place an ounce of the blood to be examined, in a glass capsule, and warm it for some time on the water-bath. Cause the vapours to pass through an abducting tube, heated to redness in one point, and apply to the end of that tube, interiorly, a mixture of iodide of potassium and starch. Introduce, moreover, into the opening a strip of paper saturated with the same mixture. If, in consequence of the decomposition of Chloroform, chlorine is given off, there will be blue iodide of starch formed. So small a quantity as a ten-thousandth part of Chloroform can thus be discovered. The following process is used for Ether. Introduce the blood to be tested into a flask, with a large mouth, which will allow of being closed; by means of a string, suspend within the flask and above the blood some chromic acid, placed in a conical glass. Warm the liquid in the water-bath; the vapours of Ether, as they are given off, will be known by the brickish hue which they will give to the crystals of the chromic acid. Alcohol and carburetted hydrogen, however, act in the same manner upon chromic acid.—*Journal de Chimie Médicale*, as quoted in the *Lancet*.

REPORTS OF SOCIETIES AND ACADEMIES.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

TENTH MEETING OF SESSION 1848-49. APRIL 10, 1849.

DR. ADDISON, PRESIDENT, IN THE CHAIR.

ON THE UTILITY AND NECESSITY OF PERFORMING PARACENTESIS THORACIS IN CERTAIN CASES OF PNEUMO-THORAX. By HAMILTON ROE, M.D., Physician to the Westminster Hospital, etc. The object of this paper was to show, that Pneumo-thorax is not a necessarily fatal disease, and that paracentesis is the best remedy which can be employed for its cure. The disease arises from a great variety of causes, and not unfrequently there is either little or no alteration of structure in the lungs. The author related two fatal cases, in which paracentesis was recommended by him, but not performed; and in which, after death, it was found that there was, in one instance, no perforation nor disease of the lung whatever; while in the other, the opening in the pleura was very small; and although four small caverns and a small number of tubercles of inconsiderable size existed in it, there was no organic disease immediately fatal, and life might have been at least prolonged, had the lung been relieved from the pressure of the air in the pleura by the operation of paracentesis. Several other writers have narrated similar cases, especially M. SAUSSIER, who has shown that the possible causes of Pneumo-thorax are seventeen. The author himself arranged the varieties of cases under four heads: 1, those where the air is secreted by the pleura; 2, those where it arises from decomposition of fluid; 3, the cases where it escapes from a distended or ruptured emphysematous cell; and 4, those where it issues from a fissure in the lung. The first three varieties are susceptible of cure, and the fourth is not necessarily fatal. After describing the symptoms distinguishing these different varieties of the disease, the author proceeded to show that the mere presence of air in the pleura is not a source of danger; that it may in some cases be absorbed, and that it is therefore only where air is accumulated in such quantity, as to cause great difficulty of breathing, that we are called on to remove it by tapping the chest. The operation, in order to be successful, ought to be performed before the lung by compression has become carnified, and the other lung congested. The objection that the air admitted from without will itself compress the lung, is met by saying, "that if the wound made by the canula in tapping be kept open, the lung, if healthy, will expand on being relieved from pressure, and may, if the air can escape as fast as it enters, not only come into contact with the costal pleura, but contract adhesion to it, and obliterate the pleural cavity." In support of this statement, he gave the particulars of a case observed and related by Mr. BENJAMIN PHILLIPS, in which, by sloughing of the soft parts, the cavity of the pleura was completely laid open, in two intercostal spaces, to the extent of several inches, and where, "at every act of ordinary inspiration, the lung came into close contact with the ribs; at every expiration, the lung retreated to the extent of half an inch from the ribs." The author then referred to published reports of nineteen cases, in which paracentesis thoracis had been performed for Pneumo-thorax, in ten cases successfully; and, after observing that the question, whether the opening made in the operation should be closed, or kept open, is yet to be decided, but that it seems desirable to him to keep it open, when the air enters the pleura through an opening in the lung, and to close it in other cases; he concluded his paper by relating a case, in which the wound was left open, with a favourable result.

DR. WEBSTER, in reference to the operation of paracentesis thoracis, said that this operation was as old as the times of Hippocrates. He then alluded

to a case which, some years since, had come under his own care, of circumscribed abscess of the lung, connected with the costal pleura, in which he believed an operation would have saved life.

Dr. Snow said, that the last case related appeared to be one of empyema, and not of pneumo-thorax. He thought that the air was admitted during the tapping. When paracentesis of the thorax was performed in the usual way, it was impossible to prevent the admission of air, and there was not more of it in the pleura in this case than was frequently thus admitted. He considered that this view of the case would better explain why the affected side of the chest did not become distended, than the supposition of the author that it was confined by partial adhesions of the pleura. He was of opinion that in the case in the Westminster Hospital, the lung must have receded from the walls of the thorax during inspiration, and have come in contact with them during expiration, if respiration were performed by means of the muscles, as every one believed.

Dr. George Burrows did not see that the last case or the other cases of Dr. Roe had thrown any light on the difficult question, as to when we were to operate in this disease. These cases, indeed, were generally surrounded with difficulty, whether they were of a simple or complicated character. The patient was in danger of dying asphyxiated, either from the presence of air, or of air and fluid; and yet an operation in a constitution affected with such a disease was likely to fail. Should we, then, operate in such cases? He agreed with the author, that the danger of the presence of air in the pleura had been much overrated. The danger would depend mainly on the quantity and rapidity of the effusion, and the state of the lung on the affected side. If it were diseased, the lung on the opposite side would do the work of respiration with little or no bad consequences. He considered that the cases brought forward by the author had not decided in what cases of pneumo-thorax paracentesis might be employed with advantage. The first case detailed was one of pleurisy with effusion of blood, and the subsequent presence of air: this case proved fatal. The air might have arisen from the presence of an aperture in a bronchial tube. The second case was one of phthisis, with effusion of fluid and air into the pleura, and no good would have resulted from paracentesis; for if the air had escaped from the cavity of the chest by the opening made, the lung would never have again expanded. The third case he agreed with Dr. Snow in regarding as one of empyema. It had been a case of pleurisy, with abundant effusion, and, perhaps, even of ulceration of the pleura. The cases detailed were of pathological interest, but had not determined the question when the operation of paracentesis should be performed in cases of simple pneumo-thorax, or in pneumo-thorax with effusion.

Dr. Baly related the case of a man suffering from phthisis, in whom pneumo-thorax developed itself; he was bled, with great relief. He related another case of pneumo-thorax, unaccompanied by phthisis, in which the patient had paralysis of the lower extremities. Pneumo-thorax suddenly developed itself, and blood was taken from the arm with much relief. He also related a case of advanced phthisis, where air was effused into the pleura. After a time the air was nearly removed, and liquid only remained; this liquid gradually diminished, and when he last saw him, there was scarcely any remaining.

Dr. Ogier Ward related some cases, in support of Dr. Roe's ideas of the little danger that exists from the entrance of air into the cavity of the pleura. In a case where he had operated for empyema in a child, two years and a half old, air was admitted into the chest at the second operation, and again at the third, on each occasion above half a pint of healthy pus being removed. After the third operation, both the air and fluid were absorbed. In another case, the patient, an old woman, lived nearly two years with a fistulous opening into the right pleura constantly discharging pus. In a third case in which he operated, the pleura became gangrenous, and the patient

died; but this was a case of phthisis in an advanced stage. In a fourth case, the patient lived so long after the pneumo-thorax was established, and there was for some time so little disease in the lung, that he regretted he had not operated.

Dr. T. Thompson considered that the operation of paracentesis thoracis, *per se*, was unattended with any particular circumstances of hazard, the danger arising from delaying the operation until the lung became too much compressed. When fluid was in the chest, we should only allow a little to drain off at a time, in order to permit the lung to expand gradually; in this way, only a small quantity of air would be admitted, and become slowly absorbed. It was better to repeat the operation than to admit too much air at once.

Dr. Hamilton Roe, in answer to Dr. Burrows, said, that in his first case the patient was a gentleman with disease of the heart; and on examination after death, there was no aperture in the lung by which air could escape. The lung was healthy, and the air had resulted from the decomposition of the effused fluid. In the second case, he had, previous to opening the body, punctured the thorax, and a large quantity of air had escaped. This he had also done in the first case. The same effect would have resulted if the operation had been performed during life. He believed, that when the lung itself was not much altered in structure, nearly all the air in the pleura would escape if an opening were made in the parietes of the thorax; the lung would expand and nearly fill the pleura. In Mr. Phillips' case, the lung came to within half an inch of the parietes of the chest, showing a tendency to remain of a medium size, when the compression of confined air was removed. Even admitting that this expansion did not take place, the suffering from distension of the pleura, consequent upon pneumo-thorax, was so great, that the operation of paracentesis should not be delayed. In the third case, Mr. Stanley, who had operated, had taken great care not to allow air to be admitted into the pleura. In these complicated cases of pneumo-thorax with fluid, (for he thought that, after a time, fluid to some extent was always present,) the question to be decided was—Should we make an opening into the chest, and support the general health, or leave the case to Nature?

Mr. B. Phillips, in answer to the President, stated that a man was in the Westminster Hospital with an exposed lung for six or seven weeks.

Eleventh Meeting of Session 1848-9. April 24, 1849.

Dr. Addison, President, in the chair.

Case of Foreign Body in the Bronchi. By Samuel Solly, F.R.S., Senior Assistant-Surgeon to St. Thomas's Hospital. A navigator drew into his windpipe a pebble, which he had placed under his tongue to relieve thirst while working. He applied to Mr. Passmore, of Pullins-bar, who, after making him stand on his head, and taking other measures to relieve him, proposed the operation of tracheotomy; but the man preferred coming up to London. On his admission into St. Thomas's, when recumbent and at rest, he was free from cough, and unconscious of the presence of the stone; but severe cough was induced if he moved much, and he fancied the stone changed its position. He lay either on his back or right side; an attempt to turn on the left side producing dyspnœa, cough, and impending suffocation. He referred to the position of the right bronchus as that occupied by the stone, where he occasionally experienced a sore and pricking sensation. On examining with a stethoscope, the respiratory murmur was loud, but otherwise natural on the left side. On the right, there was a loud cooing sound, about four inches below the clavicle; below and over this, about three square inches, there was no respiratory murmur audible. These signs, however, varied; and, at times, the author could distinguish the sound accompanying the ingress of air at every part of the chest. Dr. Cohen found the respiratory murmur absent one inch beneath the nipple on the right side, whilst percus-

sion elicited, over the same part, a clear sound. After the patient had been in the hospital a few days, he was bound to a table, inverted, the operator frequently striking him on the chest and back with his hand. The dyspnœa and spasmodic cough forbade the maintenance of this position beyond forty or fifty seconds. This inversion of the body having produced no effect on the position of the stone, it was determined to open the trachea, which was done, and the man was again inverted, without dislodging the stone; but severe bronchitis was produced, which was twice subdued by repeated cupping and mercury. The patient suddenly left, and, returning to Holloway, died eight days afterwards. Two days after he left the hospital, he was seized with violent coughing, and was nearly suffocated. He declared, at this time, that the stone had changed its position. He had three more convulsive fits shortly before his death; and the expectoration was very profuse through the last week of his life. The *post-mortem* examination, which was conducted without Mr. Solly's knowledge, revealed extensive inflammation and suppuration in the pleura on the left side, and abscess of the substance of the lung on the right side. The stone was firmly wedged in one of the first divisions of the left bronchus, but there was no ulceration of the mucous membrane around it, indicating that it had been long resident there. It weighed 114 grains; its long axis being $\frac{3}{4}$ inch, and its short axis $\frac{1}{2}$ inch. Mr. Solly was prepared to use forceps; but as a long steel probe produced violent spasms, without affording any information as to the position of the foreign body, he did not consider himself justified in employing them. The form would have rendered it next to impracticable to have seized it with forceps. The fatal event was accelerated by the patient's returning to his accustomed stimulants, after quitting the hospital. The history of the case and the *post-mortem* appearances justify the assumption, that the stone was ejected from its original position when the fit of spasmodic coughing came on two days after he left the hospital; and that it immediately afterwards passed into the left bronchus, where it was found after death.

[While the preparation was being exhibited to the Society, Mr. Solly observed, that originally the stone was so firmly wedged in, that the tube required pressure below, in order to dislodge it.]

Mr. J. Hilton. Such cases are of great interest. It has fallen to my lot to see several of them; but, in the present one, there are symptoms which were not at all present in those to which I refer; as, for instance, the sense of suffocation experienced by the patient from the head being turned down. I cannot understand how such could be produced, except by the stone having fallen down into the larynx, and thus irritating the glottis; and it would lead me to question Mr. Solly, as to what explanation he would give in respect to this difficulty of breathing,—as to what was the size of the opening made into the trachea,—and also, how the rings of the trachea were divided, whether the foreign body could have passed through the opening,—and as to what was the cause of the emphysema.

Mr. Benjamin Phillips. In the case of Mr. Brunel, a principle was introduced by Sir Benjamin Brodie, which seems to have suggested the employment of the same plan here. He found that, when attempts were made to dislodge the foreign body, great pain was the result; and it occurred to him, in order to avoid this difficulty, to puncture the trachea, and that thus the spasmodic action would not be induced. The result was, that on two or three occasions on which the opening was made, the coin did pass out without spasm. Although this practice has been adopted on so great an authority, yet I do not believe that it is perfectly established that the successful result as to Brunel would follow in other cases. Probably the stone, in this case, did on several occasions come in contact with the glottis, and set up coughing; and it is clear, too, that the foreign body may be coughed up without spasmodic affection. Shortly after the case of Brunel, one occurred at Edinburgh, in the practice of Dr. Duncan, where a coin was swallowed; the

patient was turned up, and it was ejected without coughing. There are other cases, where a tamarind-stone has been removed; and others, where foreign bodies have been retained for weeks or months in the air-passages, and at last coughed up without any distress at all. It was by no means settled that suffocation was avoided by opening the trachea.

Mr. Solly. The impression produced before the opening of the trachea was, that the stone would not shift. The man did not cough with the spasmodic cough as if the stone shifted. I did not open the trachea because I believed the stone was in that passage. As to the extent of the opening, it was at least an inch in length—quite sufficient for the passage of any body that could have passed into the trachea.

Dr. C. J. B. Williams. Much of the difficulty in these cases arises from the *form* of the foreign body. Nothing appears more calculated to stop up the trachea than this stone; it appears just suited to perform the office of a valve, and this is the great reason why it remained so long in the left bronchus, and afterwards produced disease in the left pleura. But I think a great change takes place after the reception of the foreign body,—the result of the irritation giving rise to a thickening of the membrane of the air-tube, and thus we experience a greater difficulty of operating on the patient. The experiment of Sir B. Brodie had shown, that when the trachea is first opened, the interior may be touched without exciting cough, and it is only when the scalpel is brought up to the glottis that irritation is produced. A great practical point is, that where the presence of the foreign body is clearly made out (and the signs are always obvious), then it is most desirable that the operation should be performed to promote its expulsion, or else that Brodie's mode be adopted. The utility of the operation did not consist in the prevention of the contraction of the glottis, but in prevention of the fatal effects of it. In several attempts I have made to produce irritation in the lower animals, it has produced convulsive coughing. We may deduce an interesting pathological inference from this case; namely, the very striking manner in which it is proved that irritation in the bronchial tubes produced successive disease, deeper and deeper in the lungs. This is nothing more than what takes place in bronchitis from any other cause.

Mr. J. E. Erichsen. I believe that tracheotomy does not suspend irritation of the glottis, but the patient is not in danger of asphyxia. In cases of cut throat, I have introduced a probe through an opening in the trachea, and a spasmodic cough has been produced. There are cases in which this irritability appears to be suspended, and it is an interesting point of inquiry to what this circumstance is due. I knew a case of a girl who had the peg of a top in the air passages, and a dog, in which blades of grass appeared through the glottis. On looking over those cases, it will be generally found that the foreign body has remained a long time in the air tube. We all know that their continued presence exhausts the mucous surface. Irritability of the surface may be relieved by asphyxia; but there are certain cases in which irritability of the larynx is suspended, where mere tracheotomy would not be attended with much benefit, if any. And this leads us to the principle on which we should perform the operation. If it be desirable to endeavour to get the foreign body to pass out, I think it would be well to make the aperture larger. In Brodie's case, the patient had swallowed a half-sovereign; a breathing aperture was made, and the movements of the glottis probably went on; the half-sovereign was loosened, and slipped out edgeways. In one case a sixpence passed out during sleep, without exciting any disturbance.

Dr. Webster. I once had a case of a boy who had swallowed a cherry-stone, which remained for sixty-eight days; tracheotomy was not performed: but inflammation and suppuration taking place, the stone was vomited together with pus, and he got well. Royer-Collard mentions one at Charenton, in which a nail was swallowed, an inch and a half long, but produced no

disturbance in the lung; and also a case of a lunatic, who swallowed a bone of a mutton-chop, which remained six years in the bronchi without producing pectoral disease. But the most remarkable case is one mentioned by an old Covenanter, where a bit of mutton bone was swallowed of the size of a hazel-nut; at the end of fifteen years it was vomited up, and the patient got well. Mr. Barrow once told me of a case, in which he attended a gentleman for pectoral symptoms; till one morning he coughed up a piece of ginger, which had slipped into the glottis.

Mr. P. G. Hewett. A case was admitted into St. George's Hospital, where a man had swallowed a fourpenny-piece. He was first taken to St. Thomas's, and was there turned up on his head. In two or three days, experiencing irritation of the chest, he came to St. George's, under my care. There was evident irritation about the chest, but we could not find obstruction. He had been accustomed to bronchitis. He had been in the hospital four or five days, when one night, about a day before he was to have had an operation performed, he had a sudden fit of coughing, and the fourpenny piece made its appearance in his mouth. I do not think that the stethoscope would invariably indicate the presence of a foreign body.

Mr. Macilwain. There are many cases like those which Dr. Webster has mentioned, which give us encouragement; but we are hardly yet in a position to judge of a remedy. In many of the cases, the secondary conditions have been, perhaps, greatly the consequence of the endeavours made to extract the foreign body.

Mr. Henry Lee said, that the principle upon which the opening the trachea, in the cases now under discussion, had been introduced, had not been fully stated. If he understood the principle upon which Sir Benjamin Brodie at first performed this operation, it was neither with a view of allowing the foreign substance to escape through the opening, nor with the idea that the glottis would no longer retain its irritability; but, he believed, it was performed with the view of exhausting the irritability of the muscles of the glottis. In case the coin should descend, as it had done before, to the glottis, when the patient was subverted, if it could be allowed to remain in that position a sufficient length of time, the irritability of the muscles would be exhausted. They would relax, and the coin would be allowed to pass. The opening, then, was made in order to allow the patient to breathe during the time that this was going on. It was true that in Sir B. Brodie's case this interval did not occur. The treatment was fortunate as well as judicious; but the good fortune which attended the operation ought not to be allowed to veil the judgment with which it was undertaken.

Special General Meeting. May 1, 1849.

Dr. Addison, President in the Chair.

Accommodation Question. The Secretary having read the circular convening the meeting,

Mr. Phillips, Treasurer, said it would be necessary that the meeting should be apprised of what the Council had done in order to obtain suitable premises for the Society, and the reasons by which they were influenced in making the recommendation which was to be the subject of discussion. Considerable exertion had been made for the purpose of determining what was best to be done in the matter. So long ago as 1847, the matter came under the consideration of the Council, with reference, mainly, to two points: first, whether additional accommodation could be obtained in the premises they now occupied; and, secondly, whether the present meeting-room should be enlarged. A Committee was then appointed, to make the necessary inquiries. They found that Mr. Scott, their immediate landlord, was prepared to dispose of his interest for about £600, and that the other tenant might probably be induced to retire for a fair consideration. It was found, that about £500 would be required to put the premises into tenantable repair, and £600 for

enlarging the meeting-room. Seeing that the unexpired term of Mr. Scott's lease was only twelve years; and that, at the end of that time, the original landlord would probably require an increased rent, it was not thought advisable to adopt this course. It was afterwards thought desirable, that means should be taken to find some premises more eligible than those which they now occupied. From that time to the present every inquiry had been made, but no better premises had been found. Many difficulties in connexion with removing were seen; and the conclusion finally arrived at, was, that it was not desirable to remove at present. On further inquiry, it was found that the present holdings in the house in which the Society now occupied apartments, were terminable at Michaelmas 1850; and that, after that period, the whole of the premises could be obtained at a rent of £210, with rates and taxes amounting to about £60. This amount might, if necessary, be lessened by letting the stables at a rent of £35 per annum; and, probably, the first-floor, which might realise £100 a year. If these were let, the Society would pay £80 less than they at present paid for their apartments; if not, the rent would be £18 more. If, however, the Society placed itself in Mr. Scott's shoes, it would be liable to repairs. These had been estimated at £500; but Mr. Scott believed they would amount to much less, and was prepared to make an allowance if they should exceed £300. Mr. Pownall, the architect, had advised the Society to accept Mr. Scott's proposal; and, considering the difficulty of finding suitable premises elsewhere, the Committee appointed to inquire into the matter, recommended the Council to act upon that recommendation. Inquiries had been made, by the Committee, of Mrs. Rankin, under whom Mr. Scott held the premises, whether she would grant an extension of the lease on reasonable terms; but her views were so out of the way, that the Committee could not recommend the Council to fetter themselves with any arrangement with her. It had been represented by some, that there were houses to be had which would be more convenient. The Council, however, had used all diligence to find such, and had not succeeded. There were very many houses to be had; but none of them afforded such accommodation as the Society needed. The situation of the Society's rooms in Lincoln's-Inn-Fields, was a central one; but it became a matter of complaint, that the great bulk of the Fellows were to be found west of that locality, in consequence of which, the Society removed to the premises they now occupied. Many of the Fellows, however, were now north-west; and it might probably be found convenient to follow them thither, so that it would not be prudent for them to burden themselves with a very long lease. To show that the removal from Lincoln's-Inn-Fields was expedient, was evident from the fact, that, at the time the Society left, there were only 132 resident members; but the number at the last annual meeting, was 284. Mr. Phillips concluded by moving that the following recommendation of the Council should be agreed to: "*That it is expedient to enter into arrangements for the purpose of obtaining, at a rent of £210 per annum, the whole of the house in which the Society at present holds apartments.*"

Dr. Wilson seconded the motion.

Dr. Webster. Some important facts were stated by Mr. Phillips; but still, he confessed, he was decidedly against remaining in Berners-street. The locality was inconvenient; and, in a few years, it would be even more inconvenient than at present. Besides, if the money proposed to be expended were laid out, he did not think such accommodation could be obtained as the Society required. Their present meeting-room was very badly ventilated—(hear, hear),—and exceedingly disagreeable. They ought to have something more than a dull, unventilated, room to assemble in. If they took the lease upon the terms stated, they would be compelled to remain. His feeling was, to enter into no additional terms. He had all along thought that a more central position (Charing-Cross, Cavendish-square, or Hanover-square,) would be more eligible situations than Berners-street. He should feel disposed to

give Mr. Scott notice that they would remain as his yearly tenants; but not take the lease from him, or any one else, beyond 1855. In time, perhaps, the Society might have accumulated sufficient money to move elsewhere, and build premises for themselves. The Government, he hoped, might, in future years, be disposed to patronize Societies of such a nature; in which case, they might probably find them accommodation in a public building, or, at any rate, grant them facilities for obtaining suitable premises. He should move, therefore, as an amendment to Mr. Phillips's motion,—"*That it is not expedient to enter into any new lease with the landlord, respecting the present premises.*"

Dr. Roberts seconded the amendment.

Mr. Charles Hawkins did not see how the Society could be at all improved by the adoption of the Council's recommendation. The accommodation they now had, they possessed till 1855; and all that the Council, as it appeared to him, proposed to do, was, to add eleven years to the term of the present lease. At present they paid £217 rent, without rates and taxes; by the Council's proposal, they would have to pay £210, with rates and taxes. The expense required to put the house into repair, would be £600. The fag end of a lease was a serious thing to take upon them; and, as it was only for eleven years, he did not suppose the Council would recommend the Society to lay out £600 in the extension of the present meeting-room, which was the principal thing they now required. If the Society took the lease for this term of years, they might be obliged to leave it at the expiration of that time, if they could not come to terms with the original landlord. It was impossible for them to go to Charing-Cross, or the neighbourhood, for the rent of premises there would, of itself, swallow up their whole income. It was not possible for the Society to be continually moving to fashionable localities. The best plan would be, to enter into some arrangement, at once, with the original landlord, for a long lease, in which case it would be worth their while to expend £600, or even £1,000, in enlarging their present room.

Mr. Phillips said it was felt by the Council, that it was hardly advisable to make an outlay of £600 for so short a period as eleven years. There was no reasonable doubt, however, that an extension of the lease might be obtained. When he saw the solicitors of Mrs. Rankin (who held the property under the Berners' estate), they seemed to think that the Society was "squeezable", and that they could get what rent they pleased; but the rent at present paid was unquestionably sufficient. The sum received by Mrs. Rankin from Mr. Scott was £160; but the Society had been asked £220. It was thought advisable not to make any immediate overtures to Mrs. Rankin, or to betray any signs of anxiety about the matter, as it seemed pretty clear that she would be willing to take a reasonable rent ultimately. It was said, that the extent of Mrs. Rankin's lease was forty years; but he had reason to believe that it was not so long. If the Society had the whole house, they would not be annoyed by the nuisance to which they were now at times subject from other tenants. If the house was their own, they could admit what tenants they pleased. The managers of the Berners' estate had told him, that they could not then enter into any arrangement with regard to the extension of the lease; but that they should be glad for the Society to remain as yearly tenants, and that none but reasonable terms would be offered. They promised to furnish the Society, at any time, with a letter approving of an enlargement of their room,—so that no difficulty should be felt in the matter on their account. It had been suggested, that the room should be one in which the Fellows could meet together as in an ordinary meeting-room; but it was also thought advisable, that there should be a room in which they might sit down and read without interruption. And it was felt, that if further accommodation was obtained in the house, such a room might be secured. Other uses had also been suggested to which the premises might be applied.

Mr. Hawkins would be happy to vote for the resolution, if accompanied by the following proviso: "*Provided the Council are enabled to make such*

arrangements with the original landlord as will justify them in increasing the size of the present meeting-room."

The Chairman was about to put Dr. Webster's amendment, when

Mr. Wood said they were not yet put sufficiently in possession of the facts of the case, to enable them to come to a decision.

Mr. Arnott explained, that the Society's immediate landlord was Mr. Scott; and that he held under Mrs. Rankin, who had a lease under the Berners' estate. A part of the house was let by Mr. Scott to the Society, and a part to other tenants. The Society had, in consequence, been subject to some nuisances; and the existence of these, together with the fact, that additional accommodation was required, had brought the matter under the consideration of the Council. If they wanted further accommodation before 1855, they would have to get a further lease; if they were contented to remain, with their present room, till that period, they could do so. One reason why the matter had been delayed, was, that the members at large might have an opportunity of considering the subject. If they were content to remain as they were, no amendment was necessary, as they had only to negative the proposition made by the Council. If they took Mr. Scott's lease, they took it till 1861,—the length of his term; they could not, however, obtain possession of the whole house till Michaelmas 1850. At present they paid £210 per annum; by having the whole house, they would pay, including rates and taxes, £270. The difference might be lessened by letting the stable for £30 a year. As to their having the tail of a lease, any person might understand what that meant; and he could not see what difficulty there was connected with it. There might be some expense incurred in making repairs and alterations; and if the sum estimated (£500), had to be expended, what would that signify, if they could have a good house? But he did not think the alterations would cost any thing like that sum. At the end of the present lease, Mrs. Rankin would, no doubt, be as glad as other people to get good tenants, and would willingly grant them an extension on reasonable terms. Mr. Scott was willing to assent to these terms now; but were they sure that he would do so a few years hence, when the Society would be more pushed than at present? He thought the best plan would be, to adopt the proposal of the Council. Then, at the end of the eleven years, they must, if possible, deal with Mrs. Rankin; and if they could not, their only alternative would be, to leave.

Dr. Webster's amendment was then put; but only five hands were held up in its favour. It was consequently rejected.

Mr. Hawkins moved the *addition to the resolution* stated above.

Mr. Atkins seconded Mr. Hawkins' amendment.

Mr. Hawkins said he would not press the amendment, if Mr. Phillips would pledge himself, on behalf of the Council, to secure the original lease, and extend the meeting-room; but Mr. Phillips declined to do so.

The room having been divided, there were,—

Against the amendment	32
For the amendment	29
Majority against the amendment ...	—3

The amendment was, therefore, rejected. The original resolution was then put, and carried.

Twelfth Meeting of Session 1848-49.—May 8.

Dr. Addison, President in the Chair.

The Causes and Morbid Anatomy of Mental Disease. By John Webster, M.D., F.R.S. The author commenced his paper by observing, that having had two of his communications on the Statistics and Pathology of Mental Diseases, already published in the 26th and 28th volumes of the Society's *Transactions*, he presented the present as a further exposition of these subjects. He then stated, in illustration of the comparative frequency of madness in the two sexes, that out of 1798 lunatics admitted into Bethlem

Hospital, during six years, ending 31st of December last, 1094 were females, and only 704 male patients. He next alluded to the causes apparently producing insanity, which he divided into moral and physical, besides hereditary tendency to mental disease. Of the male lunatics, nearly one-half, or 346, became mad from moral causes; whilst the proportion of females was not quite so considerable, being 489 of the entire number. By physical causes, less than one-fourth of the male lunatics, or 156, became insane; whereas, amongst the female patients, the proportion was rather larger, being 282. Hence, speaking generally, moral causes produced half the total cases; but physical causes only one-fourth. The principal moral influence which occasioned insanity amongst males, was reverse of fortune, whereby 86 examples are recorded. Next, anxiety, which furnished 69 instances; then religion, giving 45 cases; lastly, love, which caused the loss of reason in 18 men. Amongst female lunatics, anxiety was the most frequent moral cause, producing 79 instances out of the 489 patients classed under the above category; whilst 69 cases arose from religion; 62, from the loss of relatives; and 57, from the more powerful influence of the "tender passion" upon the susceptible feelings of women. Fright caused insanity in 50 cases; reverse of fortune, in 49; whereas, amongst men, as already stated, the same cause produced nearly treble that amount,—speaking comparatively. In regard to physical causes, of the 156 male lunatics so affected, 80 cases originated from intemperance; and of the 282 female lunatics, similarly classified, 117 arose from puerperal disease. Other physical causes were subsequently mentioned by the author, before passing to the examination of hereditary tendency to mental complaints. Of 704 male lunatics, previously enumerated, 219 (or 31·10 per cent.) had hereditary tendency to mania; but of the 1,094 female insane patients, the proportion was larger, namely, 390, or 37·47 per cent. The author, amongst other remarks respecting the influence of hereditary tendency in producing mental disease, said, such an important fact, wherever it exists, should be always well considered by parties forming matrimonial engagements,—especially when both families are unfortunately so tainted. He next adverted to the age at which insanity is most likely to supervene. In males, he stated the most susceptible time of life was from 30 to 40; but in females it was earlier, being from 20 to 30. The author subsequently noticed the two sections of psychological physicians now dividing the profession, namely, the "vitalists", and the "anatomists"; of which latter body he is himself a disciple, since he considers their doctrine the most rational, and in a greater degree consistent with the present advanced state of pathological knowledge respecting mental diseases.

The author afterwards gave a synopsis of 67 dissections made at Bethlem Hospital. In 53 cases, effusion of water had taken place in the ventricles; in 53 cases, also, there was infiltration of the pia mater; in 38, turgidity of the cerebral blood-vessels; in 30, the arachnoid membrane was thickened and opaque; in 26, the colour of the brain was altered from its natural tint; in 15, there was an effusion of blood within the skull, besides other alterations of structure, as mentioned by the author. The organs of the chest were likewise more or less diseased in as many as 62 of the patients; whilst in 30, morbid changes were likewise noticed in the abdominal viscera. So much so, indeed, was this the case, that the immediate cause of death, in a number of the insane patients referred to in the present communication, was apparently disease in these parts; but, more especially, affections of the organs of respiration.

Dr. Webster then alluded to the long period during which some of the lunatics had laboured under mental aberration, particularly females,—one female lunatic having constantly resided in the incurable ward at Bethlem Hospital, for upwards of half a century, or, actually, fifty-four years; thereby showing, that the loss of reason is sometimes not incompatible with longevity.

Dr. J. A. Sutherland, Mr. Solly, Mr. Streeter, and Dr. Sibson, made observations on Dr. Webster's communication.

THIRTEENTH MEETING OF SESSION 1848-49. MAY 22.
MR. MACILWAIN, VICE-PRESIDENT, IN THE CHAIR.

TABLE OF 166 CASES OF SECONDARY SYPHILIS OBSERVED AT THE LOCK HOSPITAL, DURING THE YEARS 1838-39. WITH A STATISTICAL ANALYSIS, AND OBSERVATIONS. By HENRY LEE, F.R.C.S., Assistant-Surgeon to King's College and the Lock Hospitals. I was shown, that out of the whole number (166 cases taken consecutively, as they presented themselves) a very small proportion had been properly treated by mercury; and it was argued, that if proper mercurial treatment were not a preventive of secondary syphilis, cases where this medicine had been properly employed, and had failed to cure the disease, would have presented themselves among the rest. "If," observes the author, "in the present day it should be found that out of 100 patients presenting themselves with small-pox, a very small proportion only had ever been vaccinated, this negative evidence in favour of vaccination would carry with it as much weight as would attach itself to the histories of any number of vaccinated persons who subsequently remained free from small-pox." In like manner, the author endeavours to prove that the very small proportion in which cases of secondary syphilis occurred, after proper mercurial treatment, was an undeniable evidence of the efficacy of that medicine. The cases in the table were arranged into those which were treated by mercury, and those which were not; and each class was again subdivided into those where the primary ulcer was accompanied by induration, and those in which this had not been observed. From a comparative view of these cases, it appeared that where mercury was given ineffectually, so as not to eradicate the disease, it favoured the formation of bubo, and that, moreover, the class of secondary symptoms which followed were of a more severe nature than where no mercury had been given. The papular and scaly eruptions were observed most frequently when the disease was allowed to run its course, but the pustular and tubercular were most frequently noted where ineffectual mercurial treatment had been had recourse to. The author supposed that injudicious mercurial treatment had a tendency to convert the papular eruption into the pustular, and the scaly into the tubercular, and that, if a sufficiently large number of cases were taken, the proportion in which this would happen would be alike in each class of cases; so that it might be stated that the papular eruption would bear the same proportion to the pustular, as the scaly would to the tubercular.

MR. B. COOPER, MR. ACTON, MR. MACILWAIN, MR. GAY, and MR. LEE, engaged in an interesting conversation, but for which we have not room.

FOURTEENTH MEETING OF SESSION 1848-49. JUNE 12.
DR. ADDISON, PRESIDENT, IN THE CHAIR.

ON CERTAIN TUMOURS OF THE MAMMARY GLAND. By JOHN BIRKETT, Esq., Assistant Surgeon to Guy's Hospital. The author related cases illustrative of the general characters and structural anatomy of the morbid productions, or new growths, to which it was his especial object to direct attention. They are characterized by a remarkably lobulated exterior, and a succulent, glistening aspect, on section. They consist of a large quantity of uniting, or areolar tissue, and present, when carefully examined by the aid of the microscope, the cæcal terminations of gland tissue. Nucleated bodies are found in these hypertrophic growths, but these are merely embryonic elements, possessed in common by all new growths. The origin of these growths are due to excess of nutrition; they resemble the healthy gland structure, but have no lactiferous tubes. They usually occur before the age of thirty, and are more frequent in the unmarried than the married; the function of the mammary gland is generally unimpaired. Their more ordinary position is on the surface of the gland, and they may attain a very large size, their existence not being necessarily accompanied by pain. They are harmless, but usually not amenable to general remedies, nor to any treatment except excision. The

author concluded his paper by some remarks on hypertrophic growths generally of the breast, dividing them into perfect and imperfect hypertrophy The former most commonly occurs about puberty, and consists in great increase in the breast, from development of true gland tissue. The latter, or imperfect hypertrophy, he subdivides into lobular, general, and cystic. The first has been alluded to already. In the second, the true gland is atrophied by the encroachment of the new growth, so as to be no longer recognizable. The cystic form is regarded by the author as imperfect gland tissue, (hydatid disease of Cooper; cysto-sarcoma of Müller.)

Mr. Cæsar Hawkins did not think the author of the paper correct in designating the disease described, "lobular hypertrophy." Hypertrophy was increased growth of the natural structure, but these growths were new and isolated in their formation, and could be turned out entire. They could not, therefore, be any more denominated hypertrophy than could a fatty tumour. We knew that there were two kinds of fatty tumour, one a mere increase of deposits in the fatty cells themselves, the other isolated tumours similar to those described in the paper. There was some addition to what he knew of these tumours made by the author, such as their containing epithelial cells and imperfect ducts, but still the old name was as correct as the proposed new one.

Mr. Birkett said that some obscurity hung about his paper, from part only of it having been read. Authors had given most indefinite names to these tumours. He had seen no tumour which was not connected with the mammary gland, though it might be surrounded by dense fibro-cellular tissue, the result of the pressure of the tumour. They were as much hypertrophy of the gland as epulis was hypertrophy of the gum tissue.

Case of Popliteal Aneurism. By J. D. Wright, Surgeon-Major, Grenadier Guards. This case derives its interest from the fact of a favourable termination having followed the application of a ligature on the femoral artery after the aneurismal sac was ruptured, compression having previously failed in effecting its obliteration. The patient was aged thirty-seven. Six days prior to his admission into the hospital, he had become aware of a popliteal swelling, to which his attention was directed by pain in the knee. The tumour, on examination, was found to be as large as an orange, and presented all the characteristics of true aneurism. He was bled, and the pad of an Italian tourniquet applied over the femoral artery, just before it enters Hunter's canal. Effectual pressure could not be borne continuously; but the limb gradually became accustomed to partial interruption of the flow of blood through the artery, and the tumour became smaller and more solid. On the eighth day, however, the sac burst while the patient was at rest, and it was deemed advisable to tie the femoral artery, which was done after the lapse of only three hours. The ligature separated on the twenty-sixth day, and the wound healed kindly. A twelvemonth has since elapsed; the man is well, and the tumour is reduced two-thirds of its volume.

Peculiar Variety of Closed Pupil. By P. C. Delagarde, Surgeon of the Devon and Exeter Hospital, and of the West of England Eye Infirmary. The form of closed pupil referred to is characterized by dark brown pellicles, extending from the iris to the capsule of the lens, the consequence of inflammation of the former texture, and conjectured by the author to be portions of the uvea retained at their point of adhesion, and partially detached from the retracted iris; these pellicles may cross one another, occupy the pupil, and close its aperture. The author cites three illustrative cases, and details their treatment. 1. In a man of fifty-four, the crystalline and its capsule had been previously removed, and the dark elongations of the uvea filled the whole area of the pupil. The iris and obstructing uvea were divided transversely, by introducing a sharp-pointed iris knife through the sclerotic, be-

hind the ciliary body: the cure was permanent. 2. Dark matted bands of uvea concealed the crystalline lens, and adhered to its capsule, in a female of fifty-three, who had been the subject of syphilitic iritis six years before, which terminated in loss of vision. The crystalline lens of the right eye (being opaque) was first dispersed, and the capsule torn up, and the pupil cleared of uvea in four operations, the needle being introduced twice in front of, and twice behind, the iris. Belladonna was afterwards freely employed. A similar operation was twice repeated on the left eye, after which she suffered from rheumatic iritis, resulting from imprudent exposure, which was followed by hypopion, and the pupil was permanently closed. Some months after this the perception of light was strong, but the author did not recommend the division of the iris, as the new pupil could not have corresponded with its fellow: she has now sight sufficient to follow her household duties. 3. A wayward boy of fourteen had opacity of the cornea, and attachment of the iris to it, constituting a further complication; the sight had been lost some years before by severe inflammation, and an ulcer had penetrated the cornea of the left eye five years later. This ulcer existed at the date of his admission, and the pupil was occupied with a broad film of very dark uvea; the lens was opaque, but pale. Keratonyxis was twice performed, the capsule of the lens being opened, and the uvea freely divided. The capsule was subsequently detached from the iris, after three or four attempts, the boy's resistance rendering the operations through the sclerotic very difficult. The pupil subsequently expanded freely. The needle was subsequently introduced three times through the cornea, to cut off a large conjunctival vessel, and detach the lower edge of the pupil from the back of the cornea, at the seat of the perforating ulcer. A satisfactory result followed, the lad having sight sufficient for all common purposes.

SIXTEENTH MEETING OF SESSION 1848-49. JUNE 26, 1849.[1]

DISCOVERY OF OXALIC ACID IN THE BLOOD. A paper was read by A. B. Garrod, M.D., Assistant-Physician to University College Hospital, on a case of chronic hiccup or vomiting. The chief morbid appearances presented after death, were a slightly granular state of the kidneys, with the tubules blocked up with urate of soda. The blood, on examination, showed the presence of a large amount of urea; and Dr. Garrod also found in it a considerable amount of oxalic acid, which he obtained in the form of the octahedral and dumb-bell-formed crystals of oxalate of lime. Dr. Garrod has found traces of this acid in four other cases, but not in quantities at all equal to that found in the case detailed.

MEDICO-CHIRURGICAL SOCIETY OF EDINBURGH.

SEVENTH MEETING OF SESSION 1848-9.—MARCH 7.

DR. GAIRDNER IN THE CHAIR.

DR. SPITTAL'S SINGULAR CASE OF SPASMODIC ACTION OF THE LOWER JAW. DR. SPITTAL requested permission to make a statement in reference to the case reported at p. 407 of our April Number, in consequence of the doubt expressed in regard to the reality of the affection. In Dr. Graves' Clinical Lectures (p. 465, etc., 2nd Ed., Vol. I: Dublin, 1848), the affection is described as "an insuperable desire on the part of the patient to grind his teeth,"—originating in a "disagreeable uneasy sensation in the teeth themselves, and being for the moment alleviated by forcibly grinding them together, but immediately returning when the patient ceases to perform this action, which is therefore continued when the disease is confirmed, during the entire day. When asleep the patients no longer grind their teeth, the grinding being in all cases the result of voluntary motion." DR. GRAVES' CASES. 1. The Countess

[1] At the meeting of 26th June, several other papers were read, but the report of them we must defer till next number.

of Egmont had the grinding so confirmed, that, when she desisted, the uneasy sensation in the teeth became insupportable. She had to give up all society for several years before her death. The teeth were worn down to the very socket. 2. The Rev. Mr. B. was driven from society by the same affection. His teeth were much ground down. Incisors and canine, *whetted* by each other, acquired chisel-shaped edges, which sometimes cut the tongue like a knife. 3. A young clergyman afflicted with *tic douloureux* of several branches of fifth pair, including the left dental nerves, had the teeth of the left side only ground down. The disease ceased after two years. 4. Henry W., æt. 60, three years ago gradually got the habit of grinding his teeth, which he now does constantly when awake, and "*so loudly as to be heard in the next room.*" He is said to be unconscious of it unless when spoken to. The teeth are ground down. 5. A gentleman, æt. 45, after a severe wetting, was attacked with paralysis of the right side. He recovered; but about a year after, observed in himself a tendency to grind his teeth, which gradually increased so as to prove a "*nuisance to himself and every one about him.*" He appeared to be relieved for six months by actual cautery applied behind one ear, the use of mercury, and extraction of one tooth. The affection returned: when iron, etc., were tried in vain. *By pressing the tongue against the upper incisors, or by touching a certain part of one particular tooth*, he could at any time arrest the grinding and suspend it as long as the pressure was continued. Dr. Graves is of opinion that the irritable state of the dental nerves, which gives rise to this *irresistible tendency to grind the teeth*, depends chiefly on the existence of gout in the constitution. Dr. Spittal trusted he had shown that the affection under which his patient had laboured need not have been simulated.

On Descent in the Diving-Bell improving Deafness, dependent on Occlusion of the Eustachian Tube from Inflammation. By Dr. Adam Warden. The object of this paper was to show that the increased pressure of the atmosphere acted as a delicate wedge; that by forcing air into the tympanic cavity, it opened up the parts, and removed the obstruction.

Case of Rupture of the Bladder. By Dr. Taylor. This paper is published in the *Edinburgh Monthly Journal* for May, p. 748.

Eighth Meeting of Session 1848-9.—March 21.

James Syme, Esq., President in the Chair.

Tumour of the Cheek.—Varicose Veins with Phlebolites. Mr. Syme exhibited the preparation and wax cast of an unusual form of tumour of the cheek. The tumour was removed from the cheek of a girl, aged 23, who, about two years and a half before, had received a blow in that situation. Soon afterwards she observed a slight enlargement, which afterwards, from its size, became inconvenient, though not painful. Mr. Syme removed the tumour, by making an incision through the mucous membrane of the cheek, and then pulling it out, which required no force. The mass thus removed was somewhat larger than a pigeon's egg, of an ash-grey colour, irregular in shape, and enclosed within a delicate web of areolar tissue. It consisted mostly of tortuous veins, imbedded in a little fat; and was considered by Professor Goodsir as a varicose condition of the venous plexus, which is situated between the muscles of the cheek, and communicates with the internal maxillary and deep facial veins. Mr. Vander Byl, who also examined the tumour, observed that the veins were much thickened in their coats, and contained numerous phlebolites, varying in size, irregular in shape, and smaller than peas; and that these bodies consisted of a horny external portion, enclosing calcareous matter, which under the microscope presented beautiful rhomboidal plates of cholesterine, and masses of granular matter. Extensive erysipelas of the face and head had unfortunately proved fatal to this patient, some weeks after the operation.

AMPUTATION IN THE LOWER PART OF THE THIGH FOLLOWED BY NECROSIS OF THE FEMUR, FOR WHICH AMPUTATION AT THE HIP-JOINT WAS PERFORMED. MR. SYME exhibited a preparation of the upper two-thirds of a femur removed by the hip-joint operation on the 13th September last. The whole shaft of the bone was necrosed, and the exfoliation extended quite close to the joint, thus showing the necessity of the hip-joint operation. There was no tendency to separation, but a large quantity of new bone had formed round the necrosed shaft. The patient, a labourer, æt. 24, was admitted on the 7th September 1848, having, a few hours before admission, received the following injuries, occasioned by a fall of earth while working in a railway tunnel. A very severe compound dislocation of the right ankle joint, with fracture of the tibia above the malleolus, and another fracture a little above the middle; the lower end of the fibula was exposed for several inches, and very much comminuted. There was severe laceration of the soft parts—great effusion of blood, accompanied by the admission of a considerable quantity of air beneath the integuments. The tibia and fibula of the left leg were fractured above the ankle—there was great eversion of the foot, with enormous swelling and ecchymosis of the whole limb; so much so, that it was difficult to say which limb was the most severely injured. Under these circumstances, an attempt was made to save both. The exposed portion of the fibula was removed, and proper splints applied. For ten days everything went on favourably; but, after that, he was seized with bowel complaint, lost his appetite, his urine became scanty and high-coloured; he had a heavy dingy appearance, and his whole body assumed a yellowish colour; in short, he exhibited all the symptoms of phlebitis. However, in about a week, his health improved, but the discharge from the wound, and from incisions made in different parts of the leg, increased to such an extent, that, as a last resource, amputation was performed in the lower third of the thigh by the circular incision. Two circumstances worthy of notice occurred during the operation. The first of these was the greatly thickened state of the coats of the femoral vein; the other, the very dense and almost ivory appearance of the shaft of the femur. The wound, at the end of three weeks, was entirely healed, except at one small part, where the bone was felt to be bare; but the looked-for exfoliation did not become detached. Three months passed over, during which repeated attempts were made to ascertain if the dead bone would separate. The femur got thickened, and the patient suffered much pain, more especially over the trochanter and neck of the bone. Abscesses formed in all directions, there was a profuse discharge, and the patient's health became seriously affected. At a consultation, on the 12th September, it was agreed that amputation at the hip-joint was required: and it was performed on the following day by Mr. Syme, by anterior and posterior flaps. Little blood was lost, although twenty-one vessels required ligature. The operation has proved completely successful.

DILATATION OF URINARY PASSAGES FROM CALCULUS: RETENTION OF URINE: COMA: DEATH. MR. SPENCE exhibited a preparation of the urinary organs, taken from a boy seven years of age. The bladder was very much enlarged, and its muscular coat greatly increased in thickness; in the prostatic part of the urethra there was slight enlargement of the verumontanum. The right kidney was converted into a large membranous cyst, which contained a calculus; the ureter of that side was tortuous and enormously dilated, being equal in diameter to the small intestine; the left ureter was also dilated, but in a lesser degree; its dilatation was greatest near the bladder, and it became much contracted near the pelvis of the left kidney, which was dilated; the left kidney itself was considerably enlarged, but its glandular substance, though altered in structure, had not suffered as in the right kidney. The vesical orifices of the ureters on both sides, were of their natural size. Both testicles were condensed and altered in structure, and each contained a small quantity of pus.

Mr. Spence was first consulted two months before the patient's death, on account of pain and swelling in the testicles, which had then descended for the first time. On asking the parents if he complained of pain in making water, Mr. S. was told, that about four years previously he had suffered from retention of urine, which once required to be relieved by the catheter, and that afterwards he had twice passed small calculi by the urethra; they further stated, that though thin and delicate, his appetite was good; that he had no complaint except pain in making water, and after having passed it, and occasionally incontinence of urine; they had never observed any blood in his urine, nor had he had swelling of the feet and legs, or pain in the back, except just before the time when he passed the small stones. On examining a specimen of his morning urine, it was found of a pale straw-colour, with a thin cloud of mucus floating in it; had an acid reaction; under the microscope it exhibited crystals of uric acid, epithelial scales, mucus, and yellow lithate of ammonia. The parents were desired to return to have him sounded, when the irritation of the testicles was subdued. Mr. Spence heard no more of him till the evening of the 5th February, when his father brought him to have the urine drawn off; his medical attendant stated that he had drawn off the water on the two preceding days; but that on the 5th he had found it impossible, owing to struggling, and had therefore sent the child to town. Mr. Spence introduced the catheter whilst the child was under the influence of chloroform, and drew off between three and four pints. For about a week before this attack of retention, his appetite and general health had begun to fail, and for the last few days he had taken no nourishment except a little milk; he was listless and sleepy; his pulse was 100, and small; his tongue a little white, but not foul; and he had complained much of pain in making water before the retention came on. On the 7th February, after partially drawing off the urine, Mr. Spence examined the bladder carefully with a sound, but could not detect any stone; a dose of castor oil was ordered, which acted four times, and brought away a large lumbricus. He was not, however, relieved by any remedy used; the retention continued to require the use of the catheter twice a day, and after the 7th February he fell into an almost comatose state, gradually sank, and died on the morning of 9th February.

Mr. Spence directed attention to two points. *First: The cause of the disease.* The increased capacity of the bladder, taken in connexion with its increased muscular power, the dilatation of the ureters and the cystic condition of the kidneys, were precisely similar to what is seen as the result of obstruction to the excretion of urine from stricture of the urethra. Yet the boy, until a week before his death (with the exception of one occasion), never had complete retention of urine, and there was no difficulty in introducing a No. 3 catheter, nor even a No. 4 sound. *Second: The comparatively slight symptoms which have accompanied such extensive organic disease, ought to serve as a practical caution to surgeons.* Almost all the symptoms were such as often arise from urinary calculus; and had the calculus found in the kidney passed into the bladder, and been felt with the sound, there would have been nothing in the general symptoms, state of the urine, or history of the case, to have contraindicated lithotomy; which, from the state of the parts, would have been certainly fatal.

Cancer of Lung, Liver, and Spinal Column. Dr. Bennett submitted to the Society preparations from the lungs, liver, and vertebral column, illustrative of the case of a woman, aged 60, admitted into the Royal Infirmary, labouring under paraplegia. There was great emaciation, and a large sloughing sore covering the entire sacrum. On examining the chest, no particular dulness was heard anteriorly, but from the state of the patient, no examination posteriorly was made. The patient had never complained of pulmonary affection, and was stated to have been very healthy and strong up to a month before admission, when on waking one morning she found both her inferior extremities to be completely paralyzed. She sank exhausted shortly after admission.

The lungs exhibited several nodular masses, varying in size from a hazelnut to that of a walnut, some of them breaking down into a soft pulpy matter, of cheesy consistence, yellowish colour, resembling tubercle. Half of the upper lobe of the right lung, posteriorly, was occupied by a mass of this substance, the pulmonary tissue anteriorly being emphysematous. The liver contained a number of white encephaloid masses, both on the surface and throughout its substance, and in the centre of the right lobe was a large cavity, containing the same cheesy material as was found in the lungs. Other masses were observed passing from one structure to the other. The bodies of the eighth and ninth dorsal vertebræ contained a similar morbid deposit, and, from their enlargement, had pressed upon the medulla spinalis, and thus caused the paraplegia. The body of the third lumbar vertebra was also infected with cancer. The microscopic structure of these morbid masses was for the most part very similar to that described by Müller as the *reticulum* of cancer; *i. e.*, broken up cancer cells, intermixed with numerous compound granular corpuscles and granular matter. In the liver, however, a more characteristic cell-structure was discovered, passing into the retrograde cancerous mass. The bladder was corrugated, and its mucous membrane was cracked and fissured, presenting in several places an incrustation of crystalline phosphates. From the sloughs on the back, and the exhausted state of the patient when in the ward, the posterior thoracic region was not examined. Anteriorly, the chest was everywhere resonant, and no anormal râles could be heard, neither were any functional pulmonary symptoms present. It was remarkable that such extensive disease of the lungs should have existed without causing their functional derangement. Death was occasioned by exhaustion from the sloughing of the back. The case is an example of the great extent to which cancerous masses may be deposited in important internal organs, without materially interfering with their functions.

Old Hæmorrhagic Lesions (Apoplexy) of the Lungs, resulting in Sloughing Limited Abscesses, and in Coloured Cicatrices—Perforation of the pleura. Case i. A patient died under the care of Dr. Andrew, in the Royal Infirmary, having presented during life distinct signs of empyema and pneumothorax. On dissection, the left pleura was found half full of fluid; the lung was compressed, and the upper part of the pleural cavity contained air, which had evidently come from a circular perforation of the pleura, about half an inch in diameter in the lower lobe. This opening communicated with a superficial cavity the size of a cherry, and numerous closed cavities of nearly similar size were found in both lungs filled with pus, and containing small dark-coloured sloughs, such as are found in cutaneous boils. Such abscesses were commonly ascribed to lobular pneumonia; but, in the present case, the lesions were shown to be the result of extravasation, by their occurrence in connexion with numerous coloured cicatrices, (not unlike some of the stages of false corpora lutea,) which were dispersed through the compressed lung, and also through the other, which was generally pervious to air. These cicatrices presented, on microscopic examination, many of those masses of pigment, varying from rust colour to black, which were characteristic of altered hematin. Case ii. A man was admitted into Mr. Syme's ward with fracture of both legs. The fractures had united, and he was considered convalescent, when he was attacked with shivering and pain in the left side of the chest. The physical signs of pneumothorax were soon developed, and he died. This man expectorated, during the last day of life, a large quantity of prune-juice coloured sputum, a portion of which was brought to Dr. Gairdner by Dr. Littlejohn, who had detected in it, on microscopic examination, beautiful rhomboidal and feathery acicular crystals of a deep red colour. These were exhibited to the society; they were the same in character as those found in apoplectic cysts; and although in this case the evidence of post-mortem examination was wanting, Dr. Gairdner was inclined to believe it to have been an instance of hæmorrhagic condensation, going through the same course as in the preceding case.

Melanotic Tumours in the Horse. Dr. W. T. Gairdner showed a specimen of melanotic tumour in the horse, which he had received from Mr. Barlow. It was of a bistre colour, yielded an inky fluid, and was of the consistence of a fibrous or sarcomatous tumour. This species of tumour occurred, as observed by Carswell, chiefly among grey and white horses, and was not uncommon in the skin and subcutaneous tissues, especially about the anus. The pigmentary matter was in the form of dark-coloured angular granules, almost the size of blood-corpuscles, of a somewhat crystalline appearance, and mostly of a deep brown or black colour, more or less mingled with a deep purplish tinge. These granules were both free, and enclosed in cells of the diameter of 1-80th to 1-100th of a line; they were no doubt varieties of the crystalline forms derived from the colouring matter of the blood, which is known from chemical analysis also to be the source of the melanotic colour. The tumour seemed almost entirely composed of this pigmentary matter and of fibrous tissue.

MISCELLANEOUS INTELLIGENCE.

Presentation of a Testimonial to John Forbes, Esq., M.D., F.R.S. The committee appointed at the general meeting, by the subscribers to the Forbes Testimonial, to expend the sum collected, in the purchase of a piece of plate, presented this testimonial to Dr. Forbes on the evening of the 3d of May. The committee invited the subscribers in London and its vicinity to meet them on the occasion, and nearly one hundred professional gentlemen obeyed the summons. The testimonial consists of a very handsome piece of plate, a candelabrum and epergne, beautifully designed and executed by Messrs. Smith, of Duke-street, Lincoln's-inn-fields. The stem is supported by three figures, representing Industry, Health, and Hope, corresponding to Dr. Forbes' motto, "labore, robore, spe." Mr. Stanley, president of the Royal College of Surgeons, presented the testimonial to Dr. Forbes.

Testimonial to Dr. Bignell, of Barnstaple. In acknowledgment of his services to the poor of the town and neighbourhood, as Physician and Principal Manager of the Barnstaple and North Devon Dispensary, since its formation in 1832, £50, collected from his friends, in subscriptions limited to 10s. 6d. each, has lately been spent in the purchase of a silver salver and other plate, which were publicly presented to the Doctor, in the past month of May.

John Hunter Club. A good deal of jealousy and suspicion have been excited by statements in the weekly journals, to the effect, that under this designation a private society has been formed for carrying out personal and petty policy in the College of Surgeons. We cannot contradict the rumour; neither can we vouch for its truth. The election of three Fellows into the Council takes place on the 5th July: and one of the objects of the Club, it is said, is to influence the choice.

St. Mary's Hospital, Paddington. Two or three weeks ago a public dinner was held at the London Tavern. In the absence of His Royal Highness the Duke of Cambridge, Earl Manvers filled the chair. Nearly two hundred gentlemen sat down to dinner. The total amount of contributions announced during the evening, amounted to £2,600 of donations, and a legacy of £300 from the late Mr. King, of Marylebone-street.

Macclesfield Medico-Ethical Society. It embraces all the legally qualified practitioners: its principles and objects being similar to those of the Manchester Medico-Ethical Society, the rules of which, with some slight modifications, it has adopted.

University College Hospital. Her Majesty has given £100 from the privy purse in aid of this institution.—*Times*, June 16.

Bequests of the late Richard Carmichael, Esq. Mr. Carmichael has bequeathed £4500 to be added to the Medical Benevolent Fund, in addition to £500 given during his life-time; £5000 in all. To the College of Surgeons of Ireland, he has left £3000, the interest to be applied to the foundation of prizes for essays on specified subjects. To the Richmond Medical School he has also left £2000, the interest to be distributed annually in prizes amongst the students who distinguish themselves; and also £8000 to be applied in the purchase of ground and erection of buildings.—*Dublin Medical Press.*

University of Glasgow. Important Action. We understand that an action has just been raised before the Lords of Council and Session, at the instance of the Very Rev. Duncan Macfarlan, D.D., Principal, and other Members of the Faculty of the University of Glasgow, against John Sligo, Esq., of Carmyle, and other Directors of the Glasgow, Airdrie, and Monklands Railway Company, calling upon the latter to consign £90,000, also to pay £4840 as the price of land, £10,000 for an hospital, £5000 of expenses, and £20,000 of damages, etc., etc. On this action inhibitions and arrestments have been used against the defendants. The action arises from the sale of the University Buildings under the Act of Parliament which this Railway lately obtained. It is likely to give some occupation to the gentlemen of the long robe in Edinburgh.

Glasgow Botanic Garden. At its meeting on Thursday last, the Town Council of Glasgow, by a majority of twenty-five to five, rejected a proposal made by one of the members, that the Council should use its influence with the Directors of the Royal Botanic Gardens to have them kept open on Sunday, or, as the memorialists termed it, "the first day of the week," and on the other days at a charge not exceeding one penny for each visitor. The Council, however, adopted a motion to memorialize the Directors to grant *free* admission to the working classes, on two days each month of the season.

New Medical Journal in Prussia. The medical staff of the Charité Hospital, at Berlin, are going to publish a journal, which is to appear three times a week, under the title of *Annalen der Berliner Charité Krankenhauses*, Reports of the Charité Hospital at Berlin.

The Great Hospital of Berlin. The Charité Hospital of Berlin is the largest establishment of the kind in the Prussian capital. There are wards for medical cases, for surgery, for the insane, and for midwifery. The number of beds is altogether 1230, and from 10,000 to 11,000 patients are admitted annually. The mean mortality is 10 per cent. The annual expenditure is about 22,500, arising both from the property of the hospital, and from a yearly contribution from Government of £1250. A great many of the patients are, however, supported by their families, servants by their masters, and prisoners by the State. It is likewise customary for people, in tolerable circumstances, to be admitted on the payment of a certain weekly sum.

Quackery in Paris. The following information we derive from an anonymous writer in the *Medical Times* of June 9. A great moral improvement is indicated in Paris by the fact, that the presence of Cholera has not given rise to any of those quack productions, or scarcely any, which usually follow in its wake. One or two puffing pamphlets, and an anti-choleraic vinegar, are the only indications which have been noted. On the other hand, ever since the Revolution of February 1848, we have been persecuted by daily advertisements from certain *virile* professors near Bedford and Soho-squares. They imagined, we presume, that we had been emasculated by the expulsion of Monarchy; but the "chaff" does not seem to produce an abundant harvest. Dr. Graham and his "Celestial Bed" have reappeared in the person and practice of a professor, said to be an ex-Prefect of his ex-Majesty, Louis Philippe. He has opened two splendid establishments at Puylevêque-sur-lot, where "he undertakes to procure a happy fertility for the majority of females reputed sterile. No payment required in cases of failure"!!

News from the United States. The following scraps from the *Boston Medical and Surgical Journal* are curious: "Dr. Hatch has been arrested at Philadelphia for counterfeiting. Eye and ear infirmaries appear to be on the increase. Cod-liver oil is constantly gaining favour in the treatment of consumption. A new and curiously constructed tooth brush has been sent out from England, which may be had at Almy's, corner of Howard-street, which is highly recommended by Dr. Hitchcock: the bristles are so arranged that the teeth can be brushed on the inner side, and thus dislodge all offending particles. Dr. Lowrie, formerly of New Jersey, is at Panama, doing a large business: physicians are pocketing the gold as it comes from the diggings. An absurd story is circulating in the papers, that Dr. Warren, of Boston, opened the stomach of a young woman last week, while under the influence of ether, and extracted a tape worm! On the authority of Dr. Warren himself, we can pronounce it wholly untrue." The above paragraphs are taken from the body of the Journal: the following are two consecutive advertisements from the cover:—"To Physicians. The Subscriber offers for sale his situation in Temple, N.H. The premises consist of a large House, Barn, and outbuildings, very commodiously arranged, and four acres of excellent land. As a location for one of the profession, the privilege is unquestionable. Notice.—A rare location for a physician is offered in a pleasant and beautiful village in York County, Maine, within about two hours' ride from Portland. The present incumbent wishing to change his business, will dispose of his stand (!), surgical instruments, medicines, books, etc., on very reasonable terms, to any competent practitioner. For further particulars, inquire at this office; if by letter, post paid."

Quackery in Brussels. The Belgian Courts have lately condemned to one year's imprisonment, and a fine of twenty francs, Francis Van Rymenant, of Antwerp, for illegally prescribing and compounding medicines. Quackery is very rife in expedients. In a Brussels paper we find the following, among a host of advertisements, for lost watches, pins, etc. etc.: "On Saturday last there was stolen a name plate, from the door of M. Lippschutz, dentist, from London, residing at No. —, ——— street. Whoever will return it shall receive five francs reward."

Medicine in Turkey. A Medical Journal has been started in the Ottoman Empire,—an important sign of the times and of the advancement of Medical Science. It is called, *La Gazette Médicale de Constantinople*, and is published in the French and Turkish languages. The editor is Haïr-Ullah-Effendi, who signs himself, "*Docteur en Médecine et Directeur des Etudes de l'Ecole Imperiale de Galata-Serai.*"

Diseases of California. The diseases most common in California are fever, leprosy, and dysentery. The yellow fever is unknown; but intermittents are very common, the natural result of the ground being under water during four months of the year, the quantity of rain that falls, the great heat of the climate, and the intense fogs. Emetics and large doses of quinine are the usual modes of treatment. Leprosy is a very common disease in all the warm regions of America. Dysentery is the most fatal disease of the country, and caused, it is said, by the general use of fruits. Generally speaking, the climate is good; and, with temperate habits and prudence, any serious malady may be avoided.

Use of Hydrophytes. A French naval surgeon, Dr. Gonleven, observing the avidity with which cows eat certain sea-weeds, as *Laminaria leptopoda*, *digitata* and *palmata*, contrived to make from them a good and nutritient soup—a very acceptable addition to the table of the poor cottager in the absence of potatoes. In Scotland, these species of Algæ are commonly eaten, and "Dulse and Tangle" is among the street-cries of Edinburgh. In the Himalayas, a species of *Laminaria* is called *goitre-leaf*, because chewed by the inhabitants where goitre prevails.—*Medical Times.*

APPOINTMENTS.

Birkett, John, Esq., appointed, on the 23rd May, Assistant-Surgeon to Guy's Hospital.

Brown, Alexander R., M.D. (for eight years Physician to the Stamford Infirmary), elected, by a majority of votes, to be Physician to the Sussex County Hospital, in the room of Dr Hall, resigned.

Lang, Henry, M.B. Lond., elected, on the 31st May, Physician to the Westminster General Dispensary (Gerard-street, Soho), vacant by the resignation of Dr. Child.

Macintosh, Dr., of Dundee, was elected Physician and Superintendent of the Royal Lunatic Asylum, Glasgow, on the 25th May, in the room of Dr. Hutcheson, retired. The votes stood thus—for Dr. Macintosh, 12: for Dr. David Skae, of the Royal Edinburgh Lunatic Asylum, 8.

Manley, Dr., appointed Honorary Surgeon to the Northern Dispensary, Liverpool.

Puleston, J. H., Esq., elected House Surgeon to the Kent Ophthalmic Hospital.

Walshe, W. H., M.D., elected Professor of Medicine to University College, in the room of Dr. C. J. B. Williams, resigned.

OBITUARY.

Aitchison, Thomas, Esq., Surgeon, at Dunbar, on 25th May.

Beilby, William, M.D., F.R.C.P.E., at his residence, 57, Northumberland-street, Edinburgh, on 30th May, of disease of the kidney. Dr. Beilby was held in very high estimation as a Christian gentleman and physician. He recently occupied the Chair of the Edinburgh College of Physicians.

Bellot, Joseph, Esq., Consulting Surgeon to the Stockport Infirmary, aged 82, on the 22nd February, at the Parsonage, Poynton, Cheshire. Mr. Bellot commenced his active professional life in 1787, when he was House-Surgeon to the Westminster Hospital. On the 5th February, 1789, he passed as Assistant-Surgeon R.N.; and on the 3rd June, 1790, as Surgeon R.N. On retiring from the service, in 1795, he settled at Stockport.

Bourgery, M., at Paris, of cholera, on 8th June. He was well known for his researches in anatomy, and was the author of a large work, entitled *Anatomie de l'homme*.

Brandreth, Thomas, Esq., Surgeon, at Liverpool, on 5th June, aged 34.

Carmichael, Richard, Esq., about three weeks ago, by accidental drowning. This distinguished surgeon was proceeding on horseback to his country residence, at Sutton, near Howth, and on arriving at a part of the strand, where an inlet of the sea flowed over the sandy beach, he asked if it would be safe to cross there: being answered in the affirmative, he ventured to cross, but when more than half way, the horse got out of his depth, and after swimming for a little, leaned over, and fell on his side, when the rider lost his seat, and became submerged in the tide.

Clift, William, Esq., F.R.S., Conservator of the Hunterian Museum of the Royal College of Surgeons of England for nearly half a century, aged 77, on the 20th June, at his residence, Stanhope Cottage, Hampstead-road. Mr. Clift was a man of very high scientific eminence, and much esteemed in private life for his straightforwardness and integrity of character. The deceased has left an only daughter (the wife of Professor Owen) and a large body of friends to deplore his loss.

Mackinnon, Donald, M.D., at Norland-square, Notting Hill, on 10th June.

Munro, James, Esq., Surgeon, at Bridge of Weir, N.B., of typhus fever, on 29th May.

Nightingall, B., Esq., formerly Resident Surgeon of the Liverpool Fever Hospital and Workhouse, aged 61, on the 22nd April, at Delph Cottage, Cheshire.

Pickance, John, Esq., Surgeon, aged 48, on 3d June, at Penshurst, Kent.

Rolland, John, Esq., Surgeon, fourth surviving son of the late Adam Rolland, Esq., of Gask, at 14, Shandwick Place, Edinburgh, on the 26th June.

BOOKS RECEIVED.

Chadwick on Alcoholic Liquors in Health and Disease. pp. 123. London: 1849. Collins' Life and Writings of the late Joseph Clarke, M.D. of Dublin. pp. 88. Dublin: 1849. Dalrymple's Pathology of the Human Eye. *Plates*. Fasc. II. London: 1849. Dendy's Portraits of Diseases of the Scalp. *Plates*. No I. 4to. London: 1849. Lee (Robert, M.D., F.R.S.), on Ganglia and Nerves of Uterus. 4to. pp. 36, *with five plates*. London; 1849. Also by same Author, Practical Observations on the Diseases of the Uterus. 4to. *with plates*, Parts I and II. London; 1849. Also by same Author, Clinical Midwifery. 12mo. 2nd Ed. *Plates*. London; 1849. Montgomery (Dr. W. T.), on Anæsthetic Agents in Midwifery. Dublin; 1849. Reports of Westminster Medical Society. No. II. London; 1849. Simpson's (William) Digest of Reports on Sanitary Reforms. London: 1849. Warburg's Fever Tincture—Official Documents relative to. London: 1849.

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ORIGINAL COMMUNICATIONS.

CLINICAL OBSERVATIONS.

By JOHN ROSE CORMACK, M.D. Edin., F.R.S.E., Fellow of the Royal College of Physicians of Edinburgh, and formerly one of the Physicians of the Royal Infirmary and Fever Hospitals of that City.

No. III. GRANULAR DEGENERATION OF THE KIDNEY, AND ITS RELATION TO SCROFULA:—PRIMARY AND SECONDARY TOXÆMIA.

In former papers, I have endeavoured to illustrate and enforce the practical importance of the recognition of two great facts with regard to albuminuria: 1. That, as regards the condition of the kidney, albuminuria is, *per se*, simply a sign of congestion; and 2. That as regards the blood, it is a sure indication of a poisoned condition, from non-elimination of excrementitious matter. When we find albumen in the urine, we may reckon with certainty on finding an abnormal amount of urea in the blood. Other poisons also may be present; for example, Dr. Garrod has recently found oxalic acid in the blood of a patient who had albuminuria and toxæmic symptoms during life, and whose kidneys, on dissection, were found to be in an early stage of granular degeneration.[1]

The confused association by authors of various symptoms and morbid appearances under the term "*Bright's disease*", is much to be regretted; the more especially, as the precise sense in which even some of the most esteemed employ it, can seldom be discovered. Some seem to insinuate that albuminous urine is an essential symptom of "Bright's disease": others doubt this, or assert the contrary. Some consider fatty degeneration as included under the term: and others restrict it to granular degeneration: again, times without number, we find congested or hyperæmic kidneys described as being in the first stage of "Bright's disease"; and Dr. C. J. B. Williams uses the term "congestive degeneration" as synonymous with "Bright's disease". Dropsy, it may be added, occupies a varying place in the scale of importance with the writers on "Bright's disease". I have repeatedly attended young women with sudden suppression of the menses from exposure to cold, in whom

[1] LONDON JOURNAL OF MEDICINE for July, p. 690.

there were headache, convulsions, anasarca, and albuminous urine. These cases of menstrual, secondarily complicated with renal, toxæmia, would be described by many as instances of acute "Bright's disease". In the face of so much discrepancy and confusion, is it not, therefore, unsatisfactory to use a term which most of the authors who currently employ it, shrink from defining?—a term which, from the vague ideas attached to it, obscures the meaning of authors; unless, like Dr. C. J. B. Williams, they take the precaution to state, that they employ it in a special, or restricted sense. To prevent ambiguity, therefore, and for no other reason, in the present and following papers, the term "Bright's disease" will be avoided: and the words albuminuria, granular degeneration, etc. etc., will be used simply as expressive of facts, and without any reference to theory.

By albuminuria, I mean an albuminous condition of the urine: by granular degeneration, I mean that form of cacoplastic transformation which was found in the case about to be detailed—which was seen in the case of scarlatina formerly described—and which is not an ambiguous, but a very easily recognized, change of structure. The albuminuria, *per se*, I look on, *as regards the condition of the kidney, simply as a sign of congestion: as regards the condition of the blood, as a sign of that fluid being surcharged*[1] *with urea, and possibly with other poisonous sanguineous excrements, or abnormal metamorphoses*—of which the oxalic acid, discovered by Dr. Garrod, is a most interesting illustration. Granular degeneration is a process which, if studied in all its stages, can be easily understood. It is caused by the exudation into and around the tubuli uriniferi of a cacoplastic fluid: this fluid, commonly called *inorganizable lymph*, or *cicatrix tissue* (in virtue of its inherent tendency to contract), causes the tubes to become obliterated, and the atrophy of the renal structure to proceed so far, as often to render it difficult to be seen, while the adventitious tissue conspicuously usurps its place. The sulci, which we find on the surface of granular kidneys, are caused by the contraction of the irregularly deposited cacoplastic lymph. Cirrhosis of the liver originates in the same way. Granular degeneration and cirrhosis are decidedly the result of toxæmia, causing a cacoplastic exudation from the blood: in both, the anatomical changes are effected by the contraction of that exudation.

The subject of toxæmia is so very extensive, and the space which can be afforded to any one theme in a periodical miscellany, is necessarily so limited, that it becomes imperative to treat in a fragmentary manner of topics, which, to do justice to the author and his views, ought to be discussed at length, and in immediate juxtaposition. On the present occasion, all that is proposed, is to add a little to what was formerly said in the first of this series of Clinical Contributions, with regard to scrofula and albuminuria. At p. 462, the following remarks were made: "There is a great proneness to renal congestion in scrofulous children, even when little out of their usual degree of health; this is evidenced by the frequency of albuminuria in them. I have repeatedly found the urine albuminous in the febrile attacks of strumous children: and in a case of tabes mesenterica, with dropsy, which I lately cured (by steady mild

[1] Even normal blood contains traces of urea. Dr. Garrod, etc.

purging, cod-liver oil, and syrup of the iodide of iron), the urine, at the commencement of the treatment, was intensely coagulable by heat and nitric acid. In the diseases of children of scrofulous taint, (especially when the skin is harsh and scaly), the urine ought always to be tested for albumen; and, in a large number of cases, it will be found to contain it, but will often cease to do so, on the exhibition of a smart purgative. Dangerous cerebral diseases may thus be very often averted."

That form of toxæmia, to which we give the name of scrofula, is particularly apt to cause granular degeneration of the kidneys. The simple congestion is apt to pass into that more advanced stage of disease, in which there is an exudation of cacoplastic lymph around, and often into, the tubuli uriniferi. Dr. Madden, is his "*Thoughts on Pulmonary Consumption*"—a work of no ordinary merit—in speaking of degeneration of the kidney, says: "The kidneys were found tuberculized only in about one-sixth of Louis' cases. In about a fourth of the whole number, they were redder, and of harder consistence than natural. In one case, these organs had undergone the fatty degeneration. Other observers, Dr. Christison among the number, have noticed the occurrence of granular degeneration of the kidney, during the progress of phthisis pulmonalis; and it is well known, that a scrofulous state of the constitution powerfully predisposes to that urinary disease." (p. 183.)

In assigning to the poison of scrofula, the tendency to induce granular degeneration of the kidney, it must be remembered, that it is not the only blood-disease to which this power belongs. It has already been shown, in the case of L. H. D., formerly described (p. 454), that the poison of scarlatina may originate granular degeneration of the kidney: and this will fall to be more particularly illustrated in future papers. It must also be remembered, that an accidental cause may be the first in the morbid series. For example, drinking rum or whiskey, and exposure to cold, may induce renal congestion, and, as a consequence of this, may result impaired function of the kidney. The blood then becomes imperfectly purified from its excrement, and toxæmic phenomena ensue. As the consequence of congestion, and simultaneously with the constitutional symptoms induced by it, a structural change may take place in the kidney; and this structural change, except in its first stage, can hardly be cured or arrested, though very much may be done to palliate symptoms, and prolong life.

My object in relating the following case, is to show how the toxæmia may not only induce the granular disease, but, when induced, how that structural change of the kidney may itself become a source of additional toxæmia of another kind. We shall see the original or hereditary poison inducing impaired nutrition, and a specific change in the kidney: we shall also see this change in the kidney inducing cerebral and spinal phenomena, such as ordinarily arise from non-elimination of effete matter from the blood. We shall have, therefore, a case in which one group of symptoms were caused by the primary, and another by the secondary toxæmia: and in which, the structural change in the kidney causing the secondary, was the result of the primary toxæmia.

Case of H. C. G. On the 21st September, 1846, I was hastily summoned to visit a young gentleman who, I was told, had two hours

previously appeared to be in his usual health, though apparently dying when the messenger left him—in twenty minutes from which time I arrived: the patient was then dead. The mouth was distorted, and the lips quivered convulsively: but there was neither breath nor pulse. I was told that on the previous day (Sunday) he had attended church, and that on the morning of the day of his death, he had appeared to be in his usual state of health. Between eight and nine o'clock, when engaged with his tutor, he became very unwell, and was seized with vomiting. Under the impression that the illness was a "bilious attack", he was made to rest on a sofa, and a dose of four grains of ipecacuanha was administered—as the emetic effects of this medicine had relieved him on former occasions, when he seemed to be similarly affected. He was not, at first, worse than he had often been before; and it was not till an attack of convulsions supervened, that alarm was taken, and that I was sent for: it had been ushered in by a drowsy condition, very naturally ascribed to exhaustion from the vomiting. The illness terminated in death at 11 A.M., within three hours from the first symptoms which he exhibited of being out of his ordinary degree of health. I never saw the patient in life: but Mr. Cooper, of Brentford, his ordinary medical attendant, informed me, that though always weak and ailing a little, yet he had never attended him for any definite or severe symptoms. A coroner's inquest was summoned, and, in accordance with the evidence adduced, the verdict was to the effect that the deceased had died from natural causes. The coroner did not conceive himself justified in putting the county to the expense of an anatomical examination; but the connexions of the diseased wishing to ascertain the cause of death, requested Mr. Cooper and me, to dissect the body: which we did with great care. The following is a copy of the report which we delivered to the relatives.

NOTES OF THE APPEARANCES FOUND ON EXAMINING THE BODY, seventy-two hours after death, on September 24th, 1846.

External Appearance. The surface of the body evinced the following marks of putrefaction:—the face and neck were enormously swelled; the hair was scarcely adherent to the scalp; and the integument was of a mixed green and purple colour, of varied intensity, from the head to the hips; below this, there were large livid patches, mixed with portions exhibiting the ordinary appearances of a recently dead body. From the nose was issuing profusely a fœtid and frothy discharge, which seemed to consist of decomposed blood and *pus*—possibly *mucus*. The cavities of the chest and abdomen were greatly distended with gas. The head was observed to be large, and unsymmetrical.

Head. The encephalon generally was soft; the firmest parts were the optic thalami and the pons Varolii. The vessels were greatly distended with blood;—part of this distension, however, being evidently caused by the gases evolved from the contained decomposing blood. The lateral ventricles were distended to more than twice their natural volume by serous fluid. Within the sac of the arachnoid, there was a large quantity of fluid. The brain was carefully searched for an abscess, but no trace of pus, nor any abnormal cavity, could be found. The petrous portion of the right temporal bone, when struck with the back of the knife, yielded a hollow sound. This was especially noticed,

by contrasting it with the sound elicited on striking, in the same way, the corresponding part on the left side. The petrous portion of the right temporal bone was also obviously larger than its fellow. The saw cut through it with unnatural ease; and in some parts it yielded to the knife. The bony ridges on the internal surface of the cranium were generally unusually sharp, and in some parts of the anterior of the base, their spiculated feeling was very striking.

Chest. After two ligatures had been applied around the great vessels, the lungs and heart were removed. The lungs filled the whole cavity of the chest, and were in no part adherent to the parietes. The left pulmonary pleura presented posteriorly some loosely adherent flocculi of lymph. Both lungs were gorged with blood, and when cut into, had a solid aspect, and feeling. In one or two parts, there was a crackling elicited by pressure, depending obviously on the gaseous products of the decomposed blood. The heart was quite empty, of a pale and flaccid fibre, and offered very little resistance when torn. The cavities of both pleuræ contained bloody serum. The quantity we estimated at above a pint.

Abdomen. The stomach was empty. The stomach and intestines appeared to be natural. The liver was twice the normal size: it was soft and friable throughout; the left lobe was pale and waxy; the right seemed to be pretty much in the same condition, but was dark in colour, from sanguineous engorgement. The gall-bladder contained a considerable quantity of apparently healthy bile, which by moderate pressure was made to flow into the duodenum. The left kidney had a hard, rough, and granular texture, which when cut into, presented a dirty white appearance. The examination of the right kidney was accidentally omitted.

The Conclusions to be drawn from the history and post-mortem appearances are:

1st. The granular degeneration of the kidney was the result of the scrofula poison in the blood.

2nd. The granular degeneration of the kidney impeded normal sanguineous depuration by that organ, and thereby occasioned secondary toxæmia, from accumulation of excrementitious matter within the blood.

3rd. A sudden increase of this secondary toxæmia was the proximate cause of death.

4th. The cerebral disease, indicated by symptoms during life, and by lesions found on dissection, was caused partly by the primary, *i. e.*, the scrofulous toxæmia, and partly by the secondary, *i. e.*, the renal toxæmia.

In a subsequent paper, evidence will be given of renal toxæmia proving rapidly fatal by hydrocephalus, coma, and convulsions, before there was time for any structural change to take place in the kidney—at least before anything except sanguineous engorgement could be discovered, upon the most careful examination.

Essex House, Putney, July 1849.

ON COMPOUND FRACTURE OF THE CRANIUM, WITH DEPRESSION.

By JOHN CHARLES HALL, M.D., Fellow of the Royal College of Physicians of Edinburgh, Member of the Royal College of Surgeons of England, etc.

A SIMPLE record of facts in a concise and accessible form, unencumbered by hypothesis, has ever appeared to me the most valuable contribution that it is in the power of any medical man to make to the profession. The author of such a record contributes that which has a fixed and certain value, provided it be a correct, clear, and truthful description of what he has seen. Thus are supplied a number of important facts, which every physician and surgeon can study at his leisure, and reflect on for himself; and from which he may acquire a knowledge of phenomena, and of their relation to each other, almost in the same manner as if he had, at the bed-side of each patient, observed the symptoms, and noted the results for himself.

Medical hypotheses, and abstract general principles, form but precarious guides at the bed-side; and our practice, to be rational, and at the same time useful, must be grounded upon an extensive and correct knowledge of the natural history and pathology of diseases. The experience of any individual, however extensive his private and public practice—however prolonged his facilities for observation, is, after all, but limited and insufficient; and therefore, it is only upon a large number of facts, contributed by many observers, that legitimate principles, in medical science, can be founded. To assist, however humbly, in such a work, the following bed-side sketches have been written.

CASE I. When I was a student in Paris, a man, ætat. 28, was admitted into the Hôtel-Dieu, under the care of M. Roux; he had received a blow upon the head, cutting through the scalp, and fracturing the frontal bone, which exhibited very considerable depression. He was at first insensible; but shortly recovered sufficiently to walk to the hospital. He complained of pain in the head, which he asked to have dressed, in order that he might return to his employment; he was, however, desired to remain in the hospital, which he did for some weeks. He was only bled once, and kept upon a very low diet. The man never had a bad symptom, and perfectly recovered.

CASE II. Master W., a little boy, ætat. 10, in passing through the streets of Kensington, remained a short time to look at some men who were playing at quoits. One of the quoits struck him upon the left temple with considerable violence; he was immediately taken home, in a state of insensibility, and put to bed. When I saw him, with Mr. Carrick and Mr. R. J. Pollock, of Kensington, about half an hour after the infliction of the blow, he was cold and shivering; he was, however, quite sensible, and complained of sickness and pain in the head. Shortly afterwards, the contents of the stomach were ejected: the vomiting continued during the night. There was a large open wound of the scalp; and, on washing away the coagulated blood, a fracture, with considerable depression, was easily detected. The wound in the integuments was carefully brought together, and cold water was con-

stantly applied to the part, and to the head generally, which was shaved. Sumat hydrarg. chloridi gr. iv, statim.

18th, 8 A.M. Has passed a very restless night; complains of very great thirst; is constantly sick, and has great pain in the head; the skin is hot and dry; the tongue dry; pulse 120. To be bled to ʒviii, and to have ice applied to the head. ℞. Sodæ sesquicarbonatis, ℈i; syrupi aurantii, ʒi; aquæ, ʒx. Misce; fiat haustus, cum cochleari medio succi limonis 3tiâ quâque horâ sumendus. *Evening.* The sickness is much abated. To take four grains of calomel at bed-time.

19th. Much the same.

20th. Complains of pain in the head; skin hot and dry; urine scanty and high-coloured; great thirst; looks towards the light with difficulty; has been very restless during the night; constantly complains of thirst. To take an aperient draught every four hours, until the bowels act freely, and to have four grains of calomel at bed-time.

21st. The bowels have been well opened; pulse 106; complains of a good deal of pain in the head; skin hot and dry; urine scanty. Continue the aperient mixture, and the calomel at bed-time, as before.

22nd. The pain in the head is evidently on the increase, and the wound in the scalp, which had been closed with adhesive plaster, looks puffy round the edges. There is considerable tenderness of the scalp, and great intolerance of light. A few punctures were made in the scalp by Mr. Pollock with a lancet, and a poultice ordered over the seat of the injury. Venesection to ʒvi. Continue the aperient mixture as before.

23rd. The skin is still hot and dry; pulse 100. There is intolerance of light, and some slight confusion of thought. Apply six leeches to the temple; six grains of calomel to be taken at bed-time, and an aperient draught in the morning.

24th. Has passed a good night; bowels have been largely evacuated. The wound looks much more healthy. The boy is cheerful, and wishes to have something to eat.

It would be tedious to detail the subsequent daily course of this case. He day by day continued to improve, and eventually recovered; nor had he, when I again saw him, several years after the accident, experienced any inconvenience from the injury. A considerable depression still remained.

I have seldom seen a more severe injury than this. The fracture extended from the edge of the frontal to the squamous portion of the temporal, and thence to the left parietal bone. The wound in the integuments was more than two inches in length; the scalp was much bruised, and the periosteum in several parts separated from the cranium; the depressed portion of bone was, at least, one inch and a half in length, and was driven below the level of the cranium more than the eighth of an inch. So evident was it, that a woman, who was standing by at the time the wound was dressed, remarked, that "the boy's head was driven in." The treatment, as above stated, was confined to cleansing the scalp, and, after shaving off the hair, very carefully bringing the edges of the wound together, and affording a slight degree of support with a bandage. The experienced surgeons who saw the case (Messrs. Carrick and Pollock), were fully alive to the importance of thus carefully closing

the wound, and excluding every particle of air; and the indications for subduing the inflammatory symptoms were promptly attended to as they arose. The boy was never left for more than a few hours without the superintendence of a medical man; a most important point in these cases, as a few hours may make the greatest possible difference in the treatment required. I ought to have stated, that the boy lost a large quantity of blood from a branch of the temporal artery, which was wounded at the time of the accident.

Case III. A little boy was admitted into the University College Hospital, London, under the care of the late Mr. S. Cooper, for an injury of the head, received five weeks before. There was a fracture of the frontal bone, with considerable depression, and a wound leading down to it. The accident had been occasioned by a blow from the handle of a pump. As the boy was sensible, he was only bled and purged, and sent to bed. An antiphlogistic diet was strictly enjoined, and the head kept constantly cool with an evaporating lotion. No serious indisposition came on, and the lad soon got well, although a considerable depression remained. Mr. Cooper remarks, "I have seen many cases of depressed bone, with a wound of the scalp, do well without the use of the trephine."

Case IV. A little boy named Lee, between four and five years of age, was playing in Tattersall's yard, Grosvenor-place, when the shaft of a phaeton fell upon his head, and the iron projection on the underside of the shaft, to which the harness is fastened, made an indentation in the child's head, dividing the scalp, and driving down the bone for more than a quarter of an inch. The little boy was stunned for a short time only; he then vomited, and in a few hours appeared in his ordinary state of health. The case was seen by Mr. Lane, of Grosvenor-place. Nothing worthy of record was done for the child; symptoms were anxiously watched for, but none appeared. A piece of bone, larger than a sixpence, exfoliated; and after the wound had healed, a considerable depression remained.

Case V. George Ridley, an assistant groom in the stable of the late Earl Spencer, in removing some dung, was kicked upon the head. I saw the poor fellow, shortly after the injury had been received, in consultation with the late Mr. Wright, of Bawtry. There was a small wound upon the side of the head, about the size of a shilling, from which there was a considerable flow of blood. It was evident the wound had been caused by the heel of the shoe, which upon examination was found to be raised (or what the blacksmith terms "turned up"). This portion of iron had been driven through the scalp, with sufficient force to fracture the frontal bone; and the finger very readily detected the depressed portion. The man was stupid, and complained of feeling sick; the pulse was weak, and the hands and feet cold. The wound was washed, and carefully closed with adhesive plaster; the head was shaved, and the man sent to bed. In a few hours he complained of very great pain in his head; the skin was hot; pulse 100; he had been very sick. To be bled to ʒviij; cold water to be applied to the head; two grains of calomel to be given every six hours.

7th. The pain in the head is very severe. To have saline aperients; and evaporating lotions to be applied to the head. The bowels

have been well opened. *Evening.* He still complains of a good deal of pain in the head; the countenance is anxious; skin hot and dry; urine scanty; pulse 120. To be bled to ʒx. Hâc nocte sumat pulv. scammon. gr. iv, cum hydrargyri chloridi gr. iv. Mane sumat haustum sennæ compositum. Ice to be applied to the head.

8th. The pupils are dilated; and there is intolerance of light; great pain in the head; hot dry skin; great thirst; pulse 120. He has been restless during the night; the wound in the integuments looks tolerably healthy. To be bled to ʒxvi, and to have saline aperients with tartar emetic. *Evening.* The blood drawn in the morning is much buffed and cupped. He says he has much less pain in his head since the bleeding. To continue the saline mixture with tartar emetic, and to have five grains of calomel at bed-time.

9th. Has less pain in the head; there is some puffiness in the scalp, which was punctured in two or three places, and a poultice was ordered to be applied to it. Pulse 110.

10th. The pain in the head is extending to the right ear; there is less puffiness of the scalp. Pulse 100, still full and hard. To be bled to ʒxii.

11th. His mouth is a good deal affected by the calomel; he has much less pain in the head. Pulse 96; skin moist; urine much more abundant. This man was kept in bed, and very carefully watched for more than six weeks. He entirely recovered; a depression being very distinguishable over the part where the bone had been fractured.

Case vi. Mr. P., at the age of 16, whilst riding down a steep hill, was thrown from his horse, and fell with very great violence on his head. When taken up, he was quite insensible; and a severe wound of the head was found to have been received. The surgeons called in, on examining the injury, found that the scalp had been divided over the right parietal eminence, and the bone below fractured. There was considerable depression. According to the admitted principles of surgery in those days, the scalp was divided on either side of the wound, and the fracture followed to its terminations with the most laboured care. What was next to be done, in a case like this, of compound fracture with depression, and symptoms of pressure upon the brain? The trephine must be used; and preparations were accordingly made for performing the operation, which, however, was happily put a stop to by the gentleman suddenly recovering his senses, and by the removal of all symptoms of concussion and compression. The question now arose, whether it were safe to leave the patient in his present condition, without elevating the depressed portion of bone? This was very quickly decided by the patient himself, who declared that no operation should be performed. He was therefore removed to his bed, and the wound allowed to heal; and, notwithstanding the additional scalping of the surgeons, it did so without any untoward symptom. Forty years have rolled away since the accident; the gentleman is now alive, and when I last saw him he had a depression of the right parietal bone, of about a quarter of an inch in depth, and an inch and a half long. He has never suffered any pain or inconvenience from it, and is the father of a numerous and healthy family: one of whom is in extensive practice as a surgeon, and drew my attention to his father's head.

Case vii. July 1843. I was requested by my friend Mr. Raynes, a surgeon residing at Gringley-on-the-Hill, Nottinghamshire, to visit A. B. Two days before I saw him, a friend heated with wine had quarrelled with him, and unfortunately, in a fit of passion, had struck A. B. over the left parietal bone with a hammer, cutting through the scalp and causing a fracture with considerable depression, extending for more than an inch. Symptoms of inflammation, of a very severe character, had to be combated by active means. The man was kept in bed, and a bladder filled with ice and salt suspended over his head, which was shaved. The wound had been very carefully brought together with isinglass plaster, before I was called in consultation. The man was bled four times largely, and calomel was exhibited so as to affect the system. He slowly recovered; and, in three months, was able to attend to his usual avocations.

Case viii. This case will show the very great importance of strictly attending to diet for a long time after the infliction of injuries of this nature. Everything which has a tendency in any way to derange the system, must, for months after fractures of the bones of the head, be avoided, or the most fatal results may take place.

Mary Burton, a little girl, æt. 13, the daughter of a small farmer, fell down in her father's yard upon the edge of a stone trough. The integuments over the right temporal bone were wounded, and the finger could easily detect a fracture with some depression. The little patient was quite sensible. The plan of treatment already detailed was adopted; and in a few weeks the child was playing about, to all appearance as well as before her fall. Six weeks after the accident, in company with some young friends, the girl partook freely of sweet cake, ripe fruit, and home-made wine. Two days after this, she was seized with rigors, followed by great pain in the head, and the integuments over the original injury were so tender, that the slightest examination produced great pain. At this period I was called in consultation, to see the case, with the usual medical attendant of the family, Mr. Jackson. After very carefully examining the head, we were induced to direct our attention more particularly to the state of the alimentary canal. The face was flushed, the skin hot and dry; the tongue was covered with a thick white coat; pulse 120; pupils dilated. There was intolerance of light, and the slightest noise seemed to increase her sufferings. An emetic of sulphate of zinc was given immediately; after which six leeches were applied to the temples, and the bowels freely emptied by repeated doses of infusion of senna and manna, a powder of calomel and rhubarb having previously been taken. A lotion of spirits of wine, with water, was kept upon the head. When the bowels were unloaded, the pain and tenderness quickly subsided; and in a few days she was much better. The skin, however, retained a yellow hue; the child was languid, and seemed to care little about play or what was passing around her. This was removed by a few doses of grey powder and rhubarb at bed-time, and a little infusion of chirayta, with carbonate of soda, twice a day. This, and a strict attention to diet and exercise, gave us the satisfaction of again seeing our little patient quite restored to health.

Case ix. James Betts, æt. 10, was endeavouring, in July 1841, to get upon a cart. He fell with his head between the cart and the wheel,

and was drawn onwards for some distance; his head acting as a wedge, and causing the wheel to be locked for some yards. The bone was *not fractured*, but the parts were much bruised. I saw him shortly after the accident; and although every care was taken, the symptoms were much more severe than in many of the cases of fracture with depression already mentioned. The scalp became tender and puffy, and nothing but early and free incisions prevented a fatal termination of the case.

Cases of a similar nature were well described many years ago by Mr. Pott. For example: a man receives a blow, as in the case of Betts, upon the head; he is perhaps stunned at the time, but soon recovers, and remains for some time apparently quite well. In a day or two he begins to feel pain in his head; he is restless; cannot sleep; he has a frequent, full, hard pulse. The countenance is flushed; the eyes red and ferrety; then he complains of nausea and rigors, followed by delirium, convulsions, or coma. If the part first injured be examined, a change is found to take place, step by step with the general symptoms already pointed out. An experienced practitioner, on looking at the wound, would describe without a question the state of the system; or the rigors and convulsions would, on the other hand, enable him to point out, even before the dressings were removed, what would be the condition of the wound. I have seen Sir B. C. Brodie do this repeatedly. If the tumid scalp be cut through, or rather if this have not been done sufficiently early, the contiguous pericranium is found separated from the bone; nor is this change confined to the pericranium only. The bone itself is altered in colour—it is of a dead white hue, and looks drier than living bone. If the bone be removed, it will be seen that the more important parts within the skull are implicated; the dura mater is found to be separated from the cranium, and often covered by lymph or puriform matter. Inflammation of the dura mater may be regarded as very rare, as a simple and idiopathic affection. The extensive experience of the late Dr. Abercrombie only furnished one case, and even that can hardly be regarded as a case of simple inflammation of the dura mater. There was pus upon this membrane, which adhered to the cranium, over a space as large as a crown-piece; and at that precise spot the membrane was ulcerated. An adventitious membrane also existed beneath the arachnoid, where it covers the brain.

I have a few more cases of Compound Fracture of the Cranium to record, which, with the observations they suggest, and the result of my own experience in the treatment of a very great number of similar cases, must be postponed to a future number of THE LONDON JOURNAL OF MEDICINE.

(To be continued.)

Sheffield, July, 1849.

ON THE IRRITABILITY OF THE MUSCULAR FIBRE.

By MARSHALL HALL, M.D., F.R.S.

A WELL-KNOWN physiological reviewer has often, in his various publications, kindly called my attention to the experiments and reasoning of Dr. J. Reid on "Muscular Contractility", as published in the *Edinburgh Monthly Medical Journal* in 1841, and recently reprinted in that distinguished author's *Physiological Researches*. He has, in particular, done me the same service no less than *twice* in the last number but one (No. VI) of the *British and Foreign Medico-Chirurgical Review*. At page 449 of that work, he observes: "Whilst we thus fully recognize the correctness of the facts adduced by Dr. M. Hall, and admit the value of this new means of Diagnosis (which, however, even on his own admission, is by no means constantly to be relied on), we must still express our dissent from his theoretical interpretation of these phenomena, namely, that the irritability of the muscles is derived from, or directly dependent upon, the spinal cord. Nothing can, to our minds, be more convincing than the proof afforded by Dr. J. Reid's experiments, that the muscular irritability is the proper endowment of the tissue itself, depending (like other vital properties) upon its state of nutrition, which, in its turn, is regulated, *ceteris paribus*, by the degree in which the muscle is exercised. Dr. Reid has shown that the irritability of muscles may be maintained for any length of time after the complete division of the nerves, if they be duly exercised; and he has further shown, that it may be recovered, under the same circumstances, after it has been entirely exhausted. How, then, is it possible that this property can be derived from the spinal cord? *Dr. Hall has never, so far as we are aware, attempted to explain these results, but persists in his old theory, as if they had never been presented.* It is not difficult to explain all the facts adduced by him, in accordance with the doctrine which we advocate. For it is obvious, as Dr. Reid has shown, that the continuance of the connexion between the muscles and the spinal cord, after the influence of the brain has been withdrawn, will tend to sustain the nutrition, and therefore the irritability, of the muscles, in consequence of the occasional excitation of reflex contraction in them. On the other hand, as the *irritability* is not liable to be exhausted by cerebral influence, it will tend to increase, so that contractions will be occasioned by slighter stimuli; at the very same time that the whole *power* of the muscle is undergoing diminution, in consequence of its impaired nutrition."

I have endured many a lecture from the same source; and, but for the sake of truth and that science which I cultivate, would endure them on, especially as no insincere feelings of regard towards the author of the paper in question, would also deter me from *(to me)* the ungrateful task of the critic, when it leads to expressions of dissent.

The question before us is this: On what influence does this irritability of the muscular fibre depend? I have stated that this faculty is in strict dependence on the *spinal centre*. Dr. J. Reid maintains that it is independent of this centre, and dependent on the condition of *nutrition*. The appeal must be to facts. Let us then consider, or rather, reconsider the following case.

A patient is affected with hemiplegia of the right side of two years' duration. The right arm is nearly powerless; its bulk is so reduced that its circumference is one-fourth of an inch less than that of the left, usually the smaller of the two, and its temperature is also less than that of the unaffected side. The *nutrition*, I repeat, is *impaired*. Yet the irritability of the muscular fibre, carefully *tested* by galvanism, is far greater than that of the unparalysed limb! All the argumentation in the world cannot gainsay this *fact*, witnessed very recently by many competent judges, and which is only repeated here, having been stated in my former publications. The *nutrition*, then, is greatly diminished, the *irritability* greatly augmented! Why should it be necessary to say more? But in hemiplegia, the paralysed muscles, paralysed *quoad* the cerebrum, are still in connexion with the spinal centre. Let us now consider how the case would be if, instead of this, the same muscles were paralysed *quoad* the latter. I adduce an experiment from Dr. J. Reid himself.

"Exper. II. The sciatic nerve was divided in a rabbit, and a portion of it removed. Seven weeks after the operation, the animal was killed by a dose of prussic acid, and the muscles of both posterior extremities were exposed and irritated by the direct application of the wires of a galvanic battery to the muscles. The muscles of the leg of the paralysed limb contracted very feebly, while those of the other leg were thrown into powerful contraction. The muscles of the leg of the paralysed limb were evidently much smaller, paler, and softer, than the corresponding muscles of the opposite leg."[1]

I venture to designate the former *cerebral*, the latter *spinal* paralysis. In the *first*, the irritability of the muscular fibre is *augmented*; in the *second*, it is *diminished*; in *both*, nutrition is *impaired*. What is the cause, the "fons et origo" of this difference? Can any one refuse the conclusion, that the continued influence of the spinal centre on the muscular fibre is that cause? Can any one resist *this* conclusion—that augmented irritability and diminished irritability are compatible *alike* with diminished nutrition? therefore—that irritability does not depend on, however it may be modified by—as it must undoubtedly be, *cæteris paribus*—the state of the nutrition. I now beg to adduce another of Dr. J. Reid's experiments.

"Exper. I. The sciatic nerve was divided in a rabbit, and a portion of it removed. One wire from two galvanic batteries of thirty pairs of plates, was applied over the course of the nerve, and the other wire was applied over the foot, which was kept moist, until the muscles had ceased to contract. Three days after this, a weaker battery was used, and the muscles of the limb had recovered their contractility, and contracted powerfully. The more powerful battery was used as before, until the muscles had ceased to respond to the excitation, and three days after this they had again recovered their contractility."[2]

The question is—how is this fact to be explained? In answering this question, I must briefly adduce some new views, unknown probably to Dr. J. Reid at the time this paper was penned and repenned, and unknown probably to the reviewer and to Dr. Todd, who has also attempted

[1] Researches, p. 10. [2] Op. citat. p. 9.

to investigate this subject. When the galvanic current has once passed along the muscular fibre, that fibre is no longer in the condition in which it was previously. It is in a state or condition which I have ventured to designate the *electrogenic*, a condition *produced* by the current. This condition is such, that the repetition of that current ceases to effect any contraction in the muscle, the irritability of which is not, as Dr. J. Reid supposes, diminished, but rendered inoperative. This is seen by *reversing* the direction of the current, when the muscle contracts, as before, *instantly*. Or the same phenomenon is seen by suspending the original current for a very short interval, and repeating it without change. All this I was about to bring before the Royal Society; but it was contrived to renew the Prochaska calumny, and to get my labours black-balled there.

But to return:—I believe Dr. J. Reid's supposed diminished irritability or contractility in this experiment, was an electrogenic state. I will now adduce his third experiment.

"Exper. iii. The spinal nerves were cut across, as they lie in the lower part of the spinal canal, in four frogs, and both posterior extremities were thus insulated from their nervous connexions with the spinal cord. The muscles of one of the paralysed limbs were daily exercised by a weak galvanic battery, while the muscles of the other limb were allowed to remain quiescent. This was continued for two months, and at the end of that time, the muscles of the exercised limb retained their original size and firmness, and contracted vigorously, while those of the quiescent limb had shrunk to at least one-half of their former bulk, and presented a marked contrast with those of the exercised limb. The muscles of the quiescent limb still retained their contractility, even at the end of two months; but there can be little doubt that, from the imperfect nutrition of the muscles, and the progressing changes in their physical structure, this would in no long time have disappeared, had circumstances permitted me to prolong the experiment."

This experiment is obviously incomplete. It suggests, however, one important remark—a remark made by the author against myself—that "before we lay down a law in any of the sciences,—or, in other words, arrive at a true generalization,—it must include all the facts of the case."[1] If there be no other difference, that is, in scientific language, *cæteris paribus*, the irritability in two limbs, equally deprived of the influence of the spinal centre, as of any other, ought to be the *same*, augmented or diminished; but if *another* influence be added, it must, of course, produce its own effect. In the experiment under discussion, a new difference—a new element—is added, which does not affect the original question.

But I have another remark to make. The case is one not of physiology, but of pathology,—a fact neglected by many physiologists. In physiology, and *cæteris paribus*, the more stimulus is applied to muscles, the less their irritability; compare, for example, the state of activity with that of rest, throughout the animal kingdom. To this law Dr. J. Reid's experiment affords an exception. What is the precise nature of this exception? I would suggest its cautious repetition.

[1] Op. citat. p. 12.

Besides the influence of the spinal marrow, of nutrition, and of the electrogenic state, there are other influences which affect this irritability or contractility of the muscular fibre, which require investigation. One of these is, that of the condition of the blood in the minute and intermediate vessels in the muscular structure, subjected to the experiment. It is obviously *different* in the galvanized and ungalvanized limb, being more moved, perhaps more aerated, in the former.

In these experiments, many circumstances must be taken into account which have hitherto been overlooked. Some of these are—1, the *direction* of the current; 2, the *continuity*, or *repetition*, of the current; 3, the *change* of the current; 4, the *electrogenic effect* of the current; 5, the *force* of the current; for this may be—1, *physiological*; 2, *pathological*: it is the former, I believe, in my experiments read to the Royal Society; it is the latter, in many of those of Signor Matteucci.

The question, in all its bearings, is not a simple or easy one, or one to be fathomed by an experimenter who can, in physiology, confound the results of the pure current of a galvanic trough with those of the recurrent current of an electro-dynamic machine, as Dr. Todd has done.

Dr. J. Reid observes, p. 13, in reference to my experiments:

"1. As the muscles of the limb in which the sciatic nerve had been cut, could only be called into contraction by direct excitation of the muscular fibre, while the muscles of the limb in which the excito-motory movements were retained, could be called into contraction both by direct excitation of the muscular fibre, and also by excitation of the skin, it is obvious that the more vigorous contractions observed in the limb in which the nerve had been left entire, may have been partly dependent upon the galvanism acting as an excitant upon the skin in the one limb, and not in the other. That galvanism can act as an excitant upon the skin, and produce vigorous excito-motory movements, we have satisfied ourselves by experiment."

The reply to this is, in words quoted from me by Dr. J. Reid, at p. 12, that "the difference in the degree of irritability in the muscular fibre of the two limbs was observable when they were entirely *separated from the animal*."

Dr. J. Reid adds:

"Though the muscles of the posterior extremity of a frog no longer respond to the motive influence of volition, after the spinal cord has been cut across, yet if the excito-motory movements remain, these muscles, as we have satisfied ourselves by experiment, may be occasionally thrown into contraction by various causes, such as the rubbing of the skin against the surface of the vessel in which the animal is placed, when it crawls onwards by the action of its anterior extremities, while those of the limb in which the nerve has been cut remain perfectly quiescent. And if this be the case, it is obvious that these occasional muscular contractions, in the one limb, may retard, or perhaps arrest, in the muscular bundles of that limb, those physical changes which are incompatible with the manifestation of the property of muscular contractility."

It has already been proved by the fact of *augmented* irritability in the *emaciated* hemiplegic limb, that such "physical changes" are *not* "in-

compatible with the manifestation of the property of muscular irritability", as Dr. J. Reid supposes.

I will now conclude this brief note. I may be allowed some credit for forbearance when I mention, that it is eight years since the first publication of Dr. J. Reid's paper, during which time I have been goaded to a reply, and yet I have abstained, obviously not because that reply was not the easiest thing in the world. I would not write this reply, even now, if to do so did not afford me the opportunity of saying that, however I may sometimes differ from him,—and my difference is not that of a biblio-physiologist and of a pædo-critic, but of a labourer and of a veteran,—I regard Dr. John Reid as amongst the very first of the physiologists of our time and country.

P.S. I do not know that any thing I have ever published, has pledged me either for or against the Hallerian doctrine, as Dr. J. Reid seems to suppose. In nature, every motor action seems to be excited by the nerves as a medium. But galvanism may excite the muscles by penetrating, as the nerves do, their very substance. Nay, I think there is reason for believing that, whilst an electric current of great intensity acts on the nerves, and through these on the muscles, a current of low intensity acts on the muscular fibre directly. But much cautious experiment is still required to determine this question. In general, the nerve is the *excitor*, the muscle the *excited*, in all muscular movements. The *vis nervosa* and the *vis muscularis* are distinct, though they may act in unison, and probably each may be injured or destroyed without the other.

The vis nervosa may be augmented in the spinal centre. May either this in nerves or the vis muscularis undergo a similar augmentation? And, what are the distinct seat and the limit of *shock?* Is the spinal centre alone, or are the nerves and muscles also affected? The heart is involved in its effect. If shock affect the muscular irritability, and if this irritability be gradually restored, what bearing have these facts on our original question? In determining the whole question, the difference between the *irritability of the fibre*, and the *power of the mass*, must be constantly kept in mind—a precaution hitherto omitted by the gentleman whom I have quoted.

London, July 1849.

CONTRIBUTIONS TO THE PATHOLOGY AND TREATMENT OF CHOLERA.

By JAMES BIRD, A.M., M.D., formerly Surgeon of the European General Hospital at Bombay, and late Physician-General, Bombay Army.

(Continued from page 321, April Number.)

II. MODIFICATIONS, STAGES, AND SYMPTOMS, CONSIDERED COLLECTIVELY.

Some writers on Cholera would establish a difference between cases of *endemic* and *epidemic* origin; distinguishing varieties of serous diarrhœa, attended by depression of nervous energy, feebleness of the circulation, and low animal heat, as forms of *pseudo-Cholera*. There is no foundation, however, for this distinction; cases of diarrhœal Cholera, caused by functional blood lesions, may be converted by neglect, or the employment of purgatives, into well-marked attacks of Cholera. In such, as I shall clinically illustrate, languor, lassitude, nausea, and diarrhœa, accompanied by alternating chills and heats, may precede, even for several days, the appearance of purely serous, rice-water-like stools, and the *algide stage*. During the epidemic of 1818, I frequently witnessed cases of this kind, and have good ground for belief, derived from personal observation, that between these and the endemic Cholera attacks, prevalent annually in India just before the commencement of the rainy season, and those which have proved so fearfully fatal to regiments and their followers, while marching through the southern Mahratta country, there is no real difference. The action of the causes producing them may differ in intensity; but the morbid changes effected in the constitution by their agency are the same.

General description of Cholera. The invasion of Cholera is sometimes slow and insidious; sometimes, it is sudden and rapid in its progress, overpowering the vital functions, as if the person affected had been struck down by lightning or apoplexy. The first is the more common mode of attack when the disease proceeds, as would appear, from *endemic* malarious causes, or impure and deficient food; the latter is the more frequent occurrence when it is produced by epidemic atmospheric conditions of great intensity. Premonitory diarrhœal symptoms, the indications of incipient abnormal changes in the blood, usually give warning of the first kind of attack, while little or no purging precedes the vertigo, oppressed respiration, syncope, and interrupted pulse, by which the last is characterized. Some symptoms of depression, or at least of disturbance in the nervous system, usually usher in each form of attack. The patient is sleepless, complains of languor, lassitude, and listlessness, and has indescribable sensations of oppression at the chest. These are succeeded by an expression of anxiety in the countenance, pallor of the cheeks and lips, coldness of the hands and feet, nausea, and burning pain at the pit of the stomach; to which supervene vomiting, purging, and occasional tenesmus. The pulse is found, on examination, to be generally, frequent, small, and irregular: and sometimes very slow. There is extreme constriction at the præcordia; the thirst is intense and painful; the tongue, moist and cold; and there are occasional *clonic* spasms of the muscles of the abdomen and legs. Sometimes the cold-

ness of the cutaneous surface, when the disease is slow in its progress, is followed by partial dry heat of skin, and accompanied by a sharp, rapid, and compressible pulse. With the continuance of the diarrhœa, these symptoms progressively pass into collapse; though the more usual occurrence is to find the disease progressing rapidly to collapse, without any indication of reaction in the circulating system. Where this is the case, the tormina and thirst are exasperated; the vomiting and purging increase; the eyes are deeply sunk in their orbits; the countenance becomes shrivelled and Hippocratic; the skin of the hands and feet corrugated; the forehead is covered by profuse cold sweat; the vomiting, purging, and spasms, cease; the heart is feeble and fluttering in its action; the pulse almost imperceptible; the respiration frequent and oppressed; and the patient gets more and more exhausted, tossing about the bed in a constant state of restlessness; till at length coma, stertorous breathing, and the struggles of death, close the scene.

Modifications of the Disease. All the varieties I have ever seen of this extraordinary malady, may, I think, be comprehended under the *Diarrhœal*, *Pyrexial*, and *Asphyxial* forms.

1. *Diarrhœal Modification.* In this form, the causes producing Cholera appear to have had only partial effect; and to require the contingent conditions of time and circumstances to complete those changes of the blood, which constitute the complete development of the disease. Epidemic and endemic cases of this kind are frequently met with, and will be best illustrated by examples.

Case 1. James Copper, a corporal in the Grand Arsenal, aged 39 years, emaciated and feeble—states (on admission into hospital, March 14th, 1840), that, for the last three or four days, he has had frequent purging with vomiting, which increased last night. Pulse feeble; skin dry; tongue expanded and white; epigastrium tender on pressure, and somewhat full. Four grains of calomel, with aromatic confection, and a grain and a half of opium, were given on his admission in the morning, and followed by four dozen of leeches to the epigastrium, and hot fomentations. The purging continued frequent throughout the day, the stools were like rice-water; and, by the evening, the skin was more damp or cold, the pulse feebler, the eyes sunken, and the voice scarcely audible. Pills of acetate of lead, with minute portions of opium, and brandy and water for drink, and application of heat to the body, were tried without any effect in arresting the progress of the symptoms. At midnight, his pulse was scarcely perceptible; and his respiration had become greatly oppressed. The liquor lyttæ was rubbed into the chest, and produced moderate vesication, but without any decided improvement of symptoms: the disease went on to a fatal termination, which took place on the morning of the 16th. A post-mortem inspection of the body showed that the lungs were collapsed, the cavities of the right side of the heart filled with dark fluid blood, and the *glandulæ solitariæ* of the colon prominent and enlarged. There was also some venous congestion of the substance of the brain, as met with in other more rapid Cholera cases.

The intimate connexion which appears to exist, in malarious countries, between the gastro-enteritic, dysenteric, choleroid, and febrile affections, from which Europeans suffer, is indicated by the same atonic and congestive character that leads us to infer similarity of cause and

community of origin in such cases. Where such analogy of symptoms presents itself to observation, we naturally conclude that a like series of morbid changes takes place in each variety; nor can there be much cause for doubt, that such changes commence in the blood. Common diarrhœa, dysentery, or gastro-enteritis, unconnected with blood-lesions, will not, of course, terminate in Cholera; but where the cessation of endosmotic function in the pulmonic cells, as a consequence of blood disease, takes place gradually, and is accompanied by increased exosmotic action of the mucous intestinal surface, the attack may commence with all the symptoms of common diarrhœa, and terminate, in a day or two, as a case of true Cholera. The following is a good illustration of the successive morbid changes effected in cases of this kind.

Case II. James Randall, æt. 40, seaman of the Government steamer Cleopatra (admitted into hospital, May 22, 1840)—states, that he was attacked last night with vomiting and purging, accompanied by cramps of the upper and lower extremities, but made no complaint of his ailments till this morning, when he was treated for diarrhœa, on board the receiving-ship Hastings. Countenance sunken; voice and pulse feeble; tongue covered by a white film; skin cold and damp. Acetate of lead pills were given every half-hour, along with half an ounce of brandy in warm water; his extremities were shampooed, and bottles of hot water applied to his feet; the liquor lyttæ was rubbed into the epigastrium, and a blister afterwards applied. 11 A.M. Pulse more developed. Three or four rice-water-like stools have been passed since admission. An enema of acetate of lead and tincture of opium was administered, and ordered to be repeated if the purging continued. 12 A.M. Has had three stools since last report, and is disposed to sleep. 2 P.M. Has been only purged once; the stool passed is like rice-water; pulse of better strength. 4 P.M. Bowels moved twice; stools of a pale grey colour; pulse of moderate strength, and soft; headache complained of. Two pills of ten grains of calomel, with one of ipecacuanha, and one of opium, to be given along with a warm salt water enema.

May 23. The calomel and opium pills were repeated yesterday evening at eight o'clock, soon after which time, the purging of rice-water stools recommenced. Acetate of lead pills were again given during the night, and the purging ceased. The calomel and opium pills to be repeated as yesterday. *Vespere.* Bowels moved several times since morning; stools green and mucous; headache gone. ℞ Hydrargyri cum cretâ et quinæ sulphatis aa. gr. ii; pulveris ipecac. et opii aa. gr. i. M.; fiat pilula horâ somni sumenda. Utatur balneo calido; injiciatur enema anodynum si perstet diarrhœa, vel adsint tormina intestinorum.

24th. *Mane.* Bowels once moved during the night. Continuentur medicamenta heri prescripta.

25th. A small dose of carbonate of soda with rhubarb, taken this morning, acted more severely on his bowels than might have been expected, and produced much languor, accompanied by a cold clammy moisture on the skin. He was seized towards the afternoon with convulsions, became comatose, and died during the night.

A post-mortem examination, five hours after death, revealed the usual morbid appearances observable in Cholera, viz., turgescence of the membranes of the brain, abnormal distension of the blood-vessels of its

substance, with copious serous effusion into the ventricles. The lungs were emphysematous, and there were the usual marks of congestion visible in the heart and abdominal viscera.

The following is a case of *Spasmodic Cholera*, which had scarcely any of the premonitory symptoms incident to the diarrhœal modification of this disease; but as the spasms belong properly to a stage of Cholera, they cannot well be considered as the groundwork of distinction in varieties of this disease.

Case III. March 21st, 1840. Absalom Bradley, aged 36, a private of H.M. 6th regiment, admitted at noon into hospital by Dr. Morehead. Stated he had been taken ill about nine o'clock in the morning, since which time he had vomited several times, and had passed as many as five or six stools, one of which, voided since his admission, has the appearance of rice-water. Skin of nearly natural temperature. A warm bath to be used immediately, and a pill of six grains of calomel, with 1½ grain of opium, given. A mustard cataplasm to be applied to the epigastrium. 2 P.M. One copious rice-water-like stool passed since last report; stomach still irritable. The liquor lyttæ to be well rubbed into the epigastrium, and a large blister afterwards applied. An acetate of lead enema, with tincture of opium, to be used; and pills of acetate of lead and opium to be given every half-hour, along with small quantities of brandy and water. 4 P.M. Three pills taken, two of which were vomited soon after. The acetate of lead enema, with opium, was repeated about an hour ago; since which time two scanty rice-water-like motions have been passed. Pulse and skin more natural, and cramps less troublesome. 5 P.M. One scanty stool since last report; skin covered with warm perspiration; pulse feeble; cramps have ceased. The pills to be continued every half-hour, and small quantities of warm arrowroot, with an ounce of brandy, to be given to the patient every hour, or second hour, according to the strength of the pulse. 9 P.M. Had two scanty rice-water like stools about seven o'clock, since which time there has been no recurrence of purging; pulse good. Arrowroot and brandy omitted. Pills of acetate of lead and opium to be given every third hour.

22nd. Four pills given during the night; several dark grey stools passed; little or no secretion of urine; slightly increased temperature of skin; pulse of good strength. ℞ Sulphatis quinæ, calomelanos aa. gr. vi; opii gr. i; confect. aromaticæ, q. s. ut ft. massa, in pilulas æquales tres dividenda, quarum sumat unum 4tâ quaque horâ. Sumat haustum misturæ camphoræ, ʒi ss., cum acetatis potassæ, et spiritûs ætheris nitrosi aa. ʒi. Sago, with wine, to be given thrice a-day. *Vespere.* Two scanty grey stools passed since the morning; urine scanty; stomach irritable; tongue coated; skin natural, and pulse good. ℞ Calomelanos, gr. vi; pulveris ipecac., gr. ss; opii gr. i. Fiat pilula horâ somni sumenda, ut nocte, nisi dejecerit alvus, repetenda. Sumat olei ricini ʒiv cras mane.

23rd. Two light grey stools in the night; some urine passed; pulse soft and skin moist; tongue still coated. Castor oil not given. Sumat pilulam sulphatis quinæ, calomelanos, et opii, antea præscriptam tertiâ quâque horâ. Habeat haustum misturæ camphoræ, et spiritûs ætheris nitrosi. *Vespere.* Urine passed freely; pulse good, and skin natural. Capiat cras mane olei ricini ʒiv.

24th. *Vespere.* Had a good night; urine free; tongue cleaner; skin natural; several bilious yellow stools have been passed since the oil was

given in the morning. The symptoms from this date continued to amend; and the patient was discharged well on the 1st April.

The diarrhœal modifications of the disease, classed by some as *pseudo-Cholera*, can be only viewed properly as imperfectly developed forms of true Cholera, whereiu the abnormal functional changes in the blood are followed, more or less suddenly, by a complete development of the symptoms which characterize the more advanced or collapsed stage of the disease. The time which may elapse from the first manifestation of diarrhœal symptoms to the period of complete development, varies according to the intensity of the Cholera poison, and the quantity and depressing effect of the diarrhœal discharges. Sometimes, flatulency and distension of the stomach and abdomen, accompanied by anxiety at the precordia, chilliness of the whole surface of the body, and by diarrhœa of yellow watery evacuations, or bilious green and serous stools, precede for many days the symptoms of collapse; the surface then becomes livid, and is bedewed by a cold unctuous sweat, attended by white rice-coloured dejections from the bowels. On other occasions, symptoms of pyrexial reaction, burning pain at the epigastrium and navel, cramps of the abdominal muscles, vomiting and purging of thin mucous fluid, and a partially hot skin, may be met with as intermediate between the diarrhœal and the asphyxial or collapsed form. Such cases constitute the febrile or gastric modification of the disease; the treatment of which, though not attended by the same amount of success as attends the earlier diarrhœal forms, is more likely to be followed by recovery than in the slowly collapsed *asphyxial* modification.

Cholera being easy of cure in its earliest stage, or diarrhœal modification, it is of great importance to ascertain, by symptoms, how far such choleroid cases differ from simple diarrhœa. Fortunately, we possess the means of doing so, by testing, in all doubtful cases, the urine; which Mr. Busk and Dr. Rostan find to be albuminous at the beginning of the attack, and for several days after. *Whenever, therefore, there exists any cause for suspicion that the diarrhœa is choleroid, and may, if neglected, end in complete development of Cholera, we should examine the urine for albumen both by the nitric acid and heat tests.*

2. *Pyrexial Modification.* In this class of cases, the cause has only in part developed itself, or been followed by temporary cessation of endosmotic function in the pulmonic cells, and partial destruction of the heat-producing process. Incomplete and sometimes successful attempts at reaction are made by the constitution, to restore to health the impeded circulation of the pulmonary capillaries; and here the burning pain at the epigastrium, and the partially hot skin, which are indications of such reaction, evidence the constitutional effort which Nature makes to anticipate, as it were, that more active secondary fever and inflammatory reaction, which, as the fourth and last stage of Cholera, succeed to symptoms of grave collapse. The following case will illustrate modifications of this kind.

Case iv. July 4, 1840. Stephen Dewer, aged 22, a seaman from one of the ships now in harbour, was attacked this morning by vomiting and purging of watery matter, accompanied by occasional spasms of the abdominal muscles; stools passed since admission have the appearance of rice-water; pulse frequent and feeble. Sumat pilulam acetatis plumbi et opii omni semi-hora; injiciatur statim enema acetatis plumbi gr. x;

solutæ in decocto oryzæ ʒvi, cum tincturæ opii ʒss. ℞. Liquoris lyttæ, ʒss; quo perfricetur epigastrium, et postea tegatur emplastro lyttæ amplo. *Vespere.* Five pills have been taken and the enema administered; vomiting and purging have ceased; no return of the abdominal spasms; skin of moderate temperature, and soft; pulse of better strength, and easily compressible. The blister has produced moderate vesication. Continuentur pilulæ secundâ quâque horâ. 9 o'clock, P.M. Is from time to time troubled by severe cramp of his legs; pulse somewhat full and sharp. Mittatur sanguis e brachio. After eight ounces of blood had been abstracted, the pulse became more compressible, and lost its sharpness. Continuentur pilulæ tertiâ quâque horâ.

5th July. No return of cramps since the bleeding; urine passed in moderate quantity; skin and pulse soft. Four pills taken; no return of purging. Sumat haustum effervescentem secundâ quâque horâ. Continuentur pilulæ. Small quantities of sago and wine to be given to the patient at short intervals. *Vespere.* Is quite easy; bowels have not been opened; tongue somewhat coated. ℞ Calomelanos, gr. vi; sulphatis quinæ, gr. ii; opii, gr. ss. M. fiat pilula horâ somni cum haustu effervescente sumenda.

6th. Bowels not yet opened. Sumat statim olei ricini ʒvi, ex haustu aquæ menthæ piperitæ. *Vespere.* Bowels twice moved; stools passed with griping. Repetatur pilula calomelanos et opii. Sumat cras manè olei ricini ʒiv, et tincturæ opii m. x, ex haustu aquæ menthæ piperitæ.

7th. Bowels have not again been moved; occasional cramp in his toes complained of. Capiat cras manè olei ricini ʒvi.

8th. Complains of pain at the epigastrium, increased by a deep inspiration; pulse natural. Admoveantur epigastrio hirudines l. Sumat haustum effervescentem ter die.

9th. *Vespere.* Has been much griped throughout the day; pulse and skin soft. ℞ Calomelanos gr. iii; pulveris ipecacuanhæ compositi gr. x. M. fiat pulvis horâ somni sumendus. Sumat cras manè olei ricini ʒvi.

11th. Bowels gently moved yesterday by the oil. Is complaining of slight rheumatic pain in the muscles of his right leg and left shoulder. Utatur balneo fervente horâ somni. Illinatur parti dolenti linimentum camphoratum manè nocteque.

13th. Rheumatic pain of his limbs lessened; bowels gently moved by a small dose of rhubarb and carbonate of soda, given yesterday. ℞ Pilulæ hydrargyri, gr. i ss; pulveris ipecacuanhæ, gr. i; opii, gr. ss; extracti gentianæ, gr. iij. M. fiat pilula manè nocteque sumenda. Sumat cras manè olei ricini ʒi, ex haustu aquæ menthæ piperitæ.

15th. Bowels moved several times yesterday; stools watery yellow, and passed with tenesmus; tongue clean; pulse of natural frequency. Omittantur medicamenta.

16th. Complains of pain and tenderness along the ribs of the left side, and in the cardiac region, accompanied by difficult respiration and headache. Admoveantur pectori sinistro hirudines l. ℞ Magnesiæ carbonatis, ℈i; magnesiæ sulphatis, ʒvi; tincturæ gentianæ compositæ, ʒi ss; vini colchici, ℈ii; aquæ menthæ piperitæ, ʒii ss. M. fiat haustus statim sumendus.

17th. Complains of tenderness at the upper part of the sternum, and uneasiness in the superior portion of the left chest, where the respiration is puerile, accompanied by obscure vesicular murmur; headache not lessened; pulse of natural frequency; tongue furred and deficient

in moisture; bowels gently moved by the draught. ℞ Pulveris ipecacuanhæ, ℈i; vini ipecacuanhæ, ʒiiss; aquæ fontanæ, ʒi. M. fiat haustus emeticus statim sumendus. *Vespere.* Much muco-bilious matter brought away by the emetic; uneasiness of the left chest relieved; headache continues. ℞ Hydrargyri cum cretâ, gr. iij; pulveris ipecacuanhæ compositi, gr. xii. M. fiat pulvis horâ somni sumendus.

18th. No uneasiness in the left chest; slight rheumatic tenderness of the sternum; bowels not moved during the night. Sumat statim olei ricini ʒi, ex haustu aquæ menthæ piperitæ. *Vespere.* Bowels moved several times; tenderness of the scalp at the vertex; pulse full, but soft. Admoveantur temporibus hirudines xxx.

19th. Tenderness of the scalp not lessened. ℞ Misturæ antimonialis ʒi; vini colchici, m. x; morphiæ muriatis solutionis m. xv. M. fiat haustus bis die sumendus.

20th. Tenderness of the scalp lessened. Repetatur haustus magnesiæ sulphatis et vini colchici 16mo. prescriptus. *Vespere.* Bowels moved three times; headache and tenderness of the scalp as yesterday. Mittatur sanguis e brachio ad uncias xviii. Repetatur haustus misturæ antimonialis et vini colchici 19mo. præscriptus.

21st. Passed a restless night; headache and tenderness of the scalp as yesterday. ℞ Misturæ sulphatis quinæ ʒiii; vini colchici, m. xv. M. fiat haustus ter die sumendus. Sumat horâ somni pilulam calomelanos gr. iij; pulveris ipecacuanhæ, gr. i; et morphiæ muriatis, gr. ss.

22nd. Passed a good night, and slept soundly; no headache. Sumat ter die misturam sulphatis quinæ et vini colchici antea præscriptam. Repetatur pilula calomelanos et muriat. morphiæ, ut antea.

24th. Free from complaint, and permitted to leave the hospital.

The phenomena of Cholera generally, and those which constitute its various modifications, may be considered as manifestations of the pathological conditions of the organs in various stages of the disease; which conditions, however, are developed regularly or irregularly, according to the constitution of individuals, and the particular predisposing and exciting causes of the Cholera. When reaction takes place between the stage of congestion and that of *well-developed Cholera*, as in pyrexial modifications of it, this must be viewed as a pathological condition of inflammation or fever, which, though it may not happen in the usual series of effects, must be treated accordingly. The cases in which Mr. Burrel, surgeon of her Majesty's 65th regiment, employed blood-letting so successfully, during the prevalence of Indian Cholera in the year 1818, appear to have been of this kind; and the following case is a further illustration of like pyrexial modifications.

Case v. Sept. 3, 1818, William Jones, a young, healthy, European soldier, admitted into the garrison hospital, at Tannah, for a contusion of his foot. Went to sleep yesterday evening, leaving the two windows near his bed open, by which he was exposed to the night air. Awoke, sometime after midnight, with pain at the epigastrium, followed soon after by vomiting, chilliness, and cold skin; to which vertigo and purging succeeded. The head was so vertiginous, that the patient fell down several times on his way to the hospital privy; and there was a cold, clammy perspiration on his body during the whole night. Made no application for medicine till the hour of my morning visit to the hospital; when his pulse was feeble and labouring, his stomach irritable, his

skin very cold, and covered by clammy moisture. A dose of fifteen grains of calomel, and the usual draught of tincture of opium, rectified ether, and spirit of ammonia, were given, but rejected almost immediately by the stomach. The medicines were again given and retained; and the patient being then put into a hot bath, was bled from the arm to the extent of fourteen ounces. 3 P.M. The draught last given was not long retained by the stomach; epigastric tenderness and pain still complained of; pulse labouring. Sumat statim calomelanos, gr. xv; cum hausto tincturæ opii et ætheris rectificati antea præscripto. Mittatur sanguis e brachio ad uncias xii. 6 P.M. The pulse rose somewhat at first as the blood flowed from the arm, but soon after sank very low; the calomel and laudanum draught were repeated as before, and the patient put to bed, with plenty of warm covering over him, and bottles of hot water to his feet and legs. Dr. Jukes, surgeon of the garrison, had visited the hospital at 4 P.M., and ordered a blister to be applied to the epigastrium. Symptoms the same as at last report. ℞ Assafœtidæ gummi-resinæ ʒvi; sulphatis magnesiæ, ʒii; aquæ calidæ, ʒxii; tere intimatim, solve, et cola; adde liquori tincturæ opii et tincturæ castorei aa. ʒiss. M. ut fiat enema statim injiciendum. 8 P.M. Is much easier, the violent pain in his stomach and bowels having been greatly relieved by the enema; the injection of which was followed by a warm glow on the skin, and gentle perspiration. The blister has not yet produced vesication.

6th. 10 A.M. The blister has produced free vesication. Respiration more free and equable; pulse frequent and feeble; hands and feet of moderate warmth. Injiciatur statim enema assafœtidæ antea præscriptum. 6 P.M. Feels quite easy, and seems in a fair way of recovery. Skin warm and perspirable; one watery clay-coloured stool brought away by the enema.

7th-10th. Nearly well; has had one clay-coloured stool from some calomel and opiate confection, prescribed yesterday evening by Dr. Jukes. Left the hospital quite well on the 10th September.

3. *Asphyxial (or Collapsed) Modification.* In the more severe cases of this kind, there are generally no premonitory symptoms of lassitude and nervous depression, diarrhœa, or sensibly progressive congestion; but the patient is, as it were, struck by lightning, and falls down insensible, after a sudden attack of vertigo; lies with half-closed eyes, but has not altogether lost his consciousness; breathes heavily and sighs often; has an interrupted, thready, or almost imperceptible pulse, accompanied by slow action and irregular rhythm of the heart. The eyes are sunk in their sockets, and surrounded by a dark circle; the conjunctivæ are injected with blood; the lips are livid; and the extremities ice-cold and blue, accompanied by a peculiarly corrugated state of the skin, resembling the hands of a washerwoman. These symptoms may be attended by frequent choleroid evacuations from the bowels, though sometimes little or no purging precedes such attacks, and in all bears no relative ratio to the severity of the other symptoms. Sometimes this symptom is altogether absent during the prevalence of like epidemic attacks, where the presence of all the other symptoms, just enumerated, leaves no doubt of such being modifications of Cholera. Such was the case already narrated in the history of the disease in 1818.

Symptoms and Stages collectively. The characteristic symptoms of *Cholera algida*, which declare the nature of the disease, are those which

have their origin from morbid changes in the respiratory, circulating, and nervous systems; by which the voice is weakened, the inspirations rendered shallow and frequent, the respiratory murmur lessened, the action of the heart made slow and irregular, the pulse interrupted and thready, the extremities and lips livid, the exhalation from the skin and intestinal surface increased, the secretion of urine suppressed, and the animal heat diminished to a standard little short of the coldness of death. These symptoms vary in their progress and intensity, according to the original or acquired constitution of individuals; but generally come on in a certain order or progression, constituting stages of the disease: irregularities in which, or interruptions of their usual course, give rise to the several modifications I have mentioned. It is from this very irregularity, that the disease is sometimes so much more unmanageable than at others; depending, as it appears, on the greater or less intensity of the atmospheric cause, and the predisposition of individuals affected. On the first breaking out of an *epidemic Cholera*, cases of a severe type generally prevail, which become milder as the disease is disappearing. In ascertaining the value of particular remedies in the treatment, it is necessary to estimate, with precision, these conditions and circumstances; and it is of no less importance, if we would secure the probable success of such remedies, and consult the safety of particular cases, that we should not be led by a blind empiricism in our practice, but endeavour to ascertain, by an accurate discrimination of the particular modifications and stages of Cholera, what specific remedies may be applicable. A summary of the course and progress of symptoms may be conveniently arranged under FOUR STAGES: 1st, the premonitory stage of depression, or diarrhœa; 2nd, the stage of congestion, or development; 3rd, the algide stage, or that of collapse; and 4th, the well-marked stage of reaction, or consecutive fever, which is not an *essential or invariable part* of the disease, but follows as a *contingent condition of congestion* in some cases, by which the parts affected are restored to activity, and poisonous products in the blood eliminated by the secretory organs maintaining their natural functions, without yielding to a state of inflammation.

First Stage. The symptoms of this stage varied in different individuals. In some, the digestive organs were disturbed, attended by fulness of the stomach, flatulence, slight colic, dryness of the palms of the hand, yawning, and indescribable languor. In others, a sense of fulness in the stomach, accompanied by a painful sense of anxiety at the præcordium, listlessness and depression of spirits, preceded pain in the præcordial region, which was followed by diarrhœa, at first of a dark yellow colour, sometimes of a bilious green. This stage was present in the majority of Indian cases; but was not always sufficiently well marked, or of long enough duration, to be taken into account by the patients. In some, it lasted two or more days; but its period may be said to extend from the first disturbance of the digestion, and symptoms of nervous depression, to the appearance of Cholera stools, or spasms.

Second Stage. This was generally one of rigour, or chilliness. The patient's countenance had an expression of great anxiety, and was of a dusky brown hue, or livid cast. The alvine evacuations, which were in the first stage feculent, now became like rice-water, or serous, mixed with flakes of mucus; but, in some instances, they were of a leaden, turbid

appearance. Vomiting of watery matter, similar to the dejections in colour, accompanied by epigastric pain, was generally simultaneous with the purging. As the vomiting and purging progressed, and became urgent, the cyanosis of the face, neck, and extremities, increased in proportion; the skin became extremely cold, and bedewed by clammy sweat; the voice hoarse; the pulse small, and rapid; the eyes deeply sunken; accompanied by urgent thirst, deafness, and frequent violent cramps of the legs, thighs, and arms. In the earlier part of this stage, small quantities of urine were sometimes passed; but, during its latter period, the secretion from the kidneys was altogether suppressed. The complete development of these symptoms, or a more vigorous circulating system and higher degree of nervous tone in individuals, giving rise to feeble constitutional efforts of reaction in this stage, might be said to form that modification of Cholera which I have called *pyrexial*.

Third Stage. In this stage, the discharges from the stomach and bowels became less frequent, or almost ceased; the spasms were nearly at an end; the pulse, if it had not ceased, was scarcely perceptible; the whole body was bathed in cold, clammy, perspiration; the skin of the hands and feet was icy cold, and corrugated, as if long steeped in water, though many patients could not bear the bed-clothes, and complained of burning heat of skin; there was much constriction of the thorax, accompanied by breathlessness, jactitation, and anguish; the eyes were half covered by the eye-lids; and the dying man, though still conscious, appeared almost in a state of stupor. Some degree of disorder in the respiratory, circulating, and nervous systems, seemed to precede the symptoms of the *second stage;* but in this more *intense form* of the disease, the oppressed respiration, the embarrassed and struggling heart, the loss of nervous irritability, the cessation of all secretions, and the death-like coldness of every part, indicated that all the powers of life were paralyzed, and that vital action was at its lowest ebb. The apoplectic form of the disease is but a modification of this stage, wherein the cerebral functions are at once suspended, by the amount of congestion in the head; while the impeded functions of respiration, circulation, and calorification, are more recently and suddenly affected; and are attended by less real debility than when they occur more gradually.

Fourth Stage. The symptoms, and complications of reaction, have a near relation to the conditions of the third stage; as much, indeed, as sweating, or inflammatory complication in fever, bears to the cold stage. At the period of reaction, the surface of the body became gradually warmer, the skin, from being livid, resumed its natural colour; and the perspiration returned to its healthy warm state. The vomiting, cramps, and diarrhœa ceased; and there was a stronger and fuller pulse, more equable and natural respiration, and a return of both the urinary and biliary secretions, the evacuations from the bowels being now of better consistence, and green. Sometimes, however, as in the hot stage of fever, inflammatory complications of the stomach and liver took place, during the general increased action of the circulating system, with a not unfrequent constitutional *asthenic* tendency, to sinking of the pulse, coldness of the skin, reappearance of the vomiting, return of the Cholera evacuations, and such final prostration of the powers of life, as to terminate in death, after reaction had promised recovery.

(To be continued.)

BIBLIOGRAPHICAL RECORD.

PRINCIPLES OF MEDICINE: comprising General Pathology and Therapeutics, and a Brief General View of Etiology, Nosology, Semeiology, Diagnosis, Prognosis, and Hygienics. By CHARLES J. B. WILLIAMS, M.D., F.R.S. pp. 533. London: 1848.

(Continued from p. 554.)

HAVING completed his remarks on the Primary Elements of Disease, DR. WILLIAMS proceeds, in the Third Chapter of his work, to notice the SECONDARY or PROXIMATE ELEMENTS OF DISEASE, consisting of two or more Primary Elements. Those which have been most generally studied, are those affecting the circulation of the blood. They comprise at least three of the *primary elements*—the blood and its constituents, and the irritability and tonicity of the organs engaged in its distribution. It is also necessary to keep in mind the physical properties of the vessels and their contents, as these often have an important influence in the production of disease. The subjects of the present chapter are, *defect* and *excess of blood*, general or partial, with *increase* or *diminution* in the irritability or tone of the moving fibre.

ANÆMIA, or, more correctly, HYPÆMIA, or OLIGÆMIA, has for its predominant character a deficiency of blood. With this deficiency in quantity, there is generally associated a deterioration in quality, which led the late Dr. Simon to apply to the condition the term SPANÆMIA. The Exciting Causes of Anæmia act either by directly withdrawing the blood, or its animal constituents; or by impeding its healthy formation. To the latter class belong insufficient food, impure air, and various chronic diseases. But the most common cause is irregularity of the uterine function, inducing *chlorosis*. On the relation between irregular uterine function and chlorosis, Dr. Williams remarks that in many cases anæmia is evidently the effect; and this "is plain, from the well known fact, that no signs of anæmia have occurred until cold, over-exertion, or mental excitement, or some circumstance, has suddenly checked the flow of the catamenia; it has not returned, and then the patient begins to lose colour, and gradually to exhibit the anæmic state. In many cases I have known this occur in young females who have previously suffered from acute rheumatism, implicating the heart. It would seem that, in these cases, some injury is done to the blood particles, and to the powers by which they are repaired: this is manifest, not only from the pallidity, but from the yellowish and almost greenish hue, which the complexion sometimes presents, and which obviously depends on a discoloration of the textures by the altered blood, as in the neighbourhood of a bruised part." (p. 163.) The depraved appetite, sometimes met with in chlorosis, does not occur with sufficient frequency to be considered a cause of the anæmia.

The General Symptoms of Anæmia are those of general muscular weakness, weakness of the heart, feebleness of the circulation, organic weakness, and imperfect sanguification. The surface also exhibits physical signs of the scantiness of the blood; and the venous murmurs heard in the neck, and the aortic murmur frequently heard, give additional evidence of its thinness. When drawn, the blood is thin and watery, and forms a very small contracted clot, generally with a buffy coat. The red particles are diminished more than the fibrin; and the albumen is generally defective in quantity, except in paraplegia. Symptoms indicating irritation or exaltation of function often occur, many of which are referable to the intestinal canal. Sometimes there are more direct signs of excitement of sensibility, of the excito-motory function, or even of the mind. Dr. Williams explains the fact of the nervous system being generally excited in anæmia, by the peculiar distribution of the circulation through the nervous centres. He adopts the view, that the

quantity of blood in the head and spinal canal is subject to variation; the intra-cranial and intra-spinal vessels being unable, not being exposed to atmospheric pressure, to accommodate themselves to the reduction of the blood, and hence retaining more than their proper share. The effects vary, according to the propulsive power possessed by the heart. "Under the influence of temporary palpitation, fever, or other kind of excitement, the brain and spinal cord, through their uncontracted vessels, which are among the nearest to the heart, receive an unusual share of its exalted but partial force; an erethism of some one or more of the functions of these nervous centres is the consequence: and pain, spasm, sensorial excitement, intolerance of light and sound, or sympathetic irritations, of some kind or another, occur." (p. 166.) There may be in such cases, obvious signs of an excess of blood in the head, while the extremities and surface are bloodless, and more or less cold. Epistaxis, if it occur, may produce momentary relief, but may ultimately add considerably to the evil. "On the other hand, if the heart's action is feeble, it may be inadequate to propel the blood accumulated in the vessels of the brain; it therefore stagnates, and may cause some of the symptoms of congestion in that organ. Hence headache and giddiness, relieved by the recumbent posture, drowsiness, impaired mental faculties, obscured vision and hearing, partial paralysis, and, in extreme cases, coma or catalepsy. In such cases the blood is accumulated more in the veins and sinuses of the brain than in its arteries; and, not receiving enough force from the heart to keep it in full motion, it partially stagnates, and the functions of the corresponding parts are impaired in proportion. This congestion may be only temporary, and lead to no serious results; but in some cases I believe there occurs an event that has not been noticed by pathologists—namely, a coagulation of the blood in the sinuses, and a consequent permanent obstruction to the passage of the blood through the brain. I have met with several cases more or less corresponding with the following description. A young female becomes anæmic, and after exhibiting various symptoms of feeble general circulation, with headache, drowsiness, and impaired sensorial functions, suddenly becomes worse; passes into a state of stupor, with dilated pupils, sometimes varied by slight manifestations of delirium, throbbing of the carotids, and partial heat of the head, and dies comatose. On opening the head, a small quantity of serum is found under the arachnoid and in the ventricles, sometimes with a little lymph (in one case there was none). The vascularity of the membranes is remarkable, but the vessels most distended are the veins, and in the larger of these and in the longitudinal sinus, there is a firm coagulum. In parts, especially at the torcular Herophili, this coagulum blocks the whole sinus, and exhibits a separation of fibrin, portions of which are softened down into that opaque purilaginous matter which was long mistaken for pus, but which Mr. Gulliver has shown to be a mere disintegration of the fibrin, which mere stagnation in a warm temperature may effect. These have been taken for cases of meningitis. No doubt inflammation may supervene in them occasionally, but in two cases that have fallen under my notice, there was no adhesion of the arachnoid nor deposit upon it, nor any other unequivocal mark of inflammatory action; yet the fibrinous and bloody concretions in the veins and sinuses were most remarkable for their size and firmness. It appears to me most probable, that these affections originate in the encephalic congestion connected with anæmia. Fibrinous concretions form on the transverse bands of the sinuses, and increase until they considerably obstruct the passage of the blood; hence the impaired state of the cerebral functions, amounting at last to coma. Reaction may take place, with determination of blood, and even inflammation, and these cause those symptoms of partial excitement that sometimes exhibit themselves; but neither during life, nor on examination after death, are the proofs of excitement so prominent as those of obstruction and interruption to the cerebral functions. It must be remembered, that in anæmia the fibrin of the blood

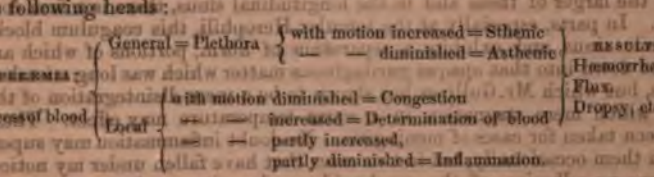
is not diminished in proportion to the other animal contents, and it has a greater tendency to coagulate than in healthy blood." (pp. 167, 168.)

Dr. Williams next refers to the mode in which the nutrition of the textures is affected by anæmia. Emaciation is not constant; but in many cases there is a considerable amount of fat: this, however, still indicates a degraded nutrition. We find generally, as is also the case in starvation (Chossat), that the nervous centres do not partake of the general emaciation: and this assists in accounting for the ascendancy of nervous function, which is so often remarked. Death may be produced suddenly, by syncope; or more gradually, by asthenia, or the development of cachectic diseases; or by the peculiar affection of the head, above referred to; or by slower changes in the nervous centres, leading to paralysis, etc.

In the *treatment* of anæmia, "a nourishing diet, with as much animal food as the digestive powers of the patient can master—tonics that best restore the appetite, the powers of digestion, and sanguification—the use of means, if necessary, to promote the natural excretions—and an exposure of the patient to the pure air and light of heaven, as free and as long as the strength and sensibility will bear—form the chief items of the treatment." (p. 169.) Dr. Williams has a high opinion of the utility of iron, especially the syrup of the iodide, preceded, if necessary, by some mild vegetable tonic. Besides tonics, special symptoms require appropriate treatment. Diffusible stimulants are often required to obviate temporary weakness; sedatives and narcotics, to allay nervous excitement: external stimulants, rest in the horizontal posture, and warmth in the extremities, to counteract the unequal distribution of blood. Depletion is of questionable utility; and more good may be done by mild stimulants and tonics, with derivants. If bleeding be at all employed, it should be local, and moderate. The nervous symptoms do not always cease with the removal of the anæmia; in such cases nervous excitement should be avoided; and the most serviceable medicinal means are the metallic tonics; especially valerianate and sulphate of zinc, nitrate and oxide of silver, and sulphate of copper.

Partial anæmia varies in its results, from numbness, weakness, and reduction of temperature, to the death and decomposition of the part, constituting gangrene. It may also produce softening and wasting of textures; and defective supply of blood to the secreting organs impairs the quantity and quality of the secretions.

Hyperæmia or Polyæmia is most ably treated of by Dr. Williams under the following heads:



The remarks on sthenic and asthenic Plethora are highly instructive; but we find that we must pass over this subject, and proceed with our analysis of the remarks made by Dr. Williams on the remaining forms of Hyperæmia.

Congestion is defined by Dr. Williams to be Local Hyperæmia with retarded motion. Its chief Causes may be classed under two heads: 1. *Those of venous obstruction*; and, 2. *Those of atony of the vessels* (capillaries and veins). Among the first kind of causes, are mechanical pressure, cold, efforts of straining, valvular disease of the heart, tubercles in the lungs, etc. A numerous class of causes is comprehended under the head of atony of the vessels. In some cases the atony is general, as in extreme debility and adynamic fevers: and the distinctive character of the congestion is to be hypostatic. It may be local; arising from over-distension from long continuance in one position, or even from congestion itself produced by some

mechanical cause; from the *intropulsive* effect of cold, or malarious and epidemic influences; or from over-excitement of the vessels, short of that degree which is necessary to produce inflammation; from sudden arrest or diminution of the proper secretion of any organ; though it is not here always easy to say whether the congestion be the cause or effect, and either is removed by the remedies employed for the other. The production of congestion by over-excitement is exemplified in several familiar instances, and may be traced under the microscope.

"When a slight irritant, as a weak infusion of capsicum, is applied to the web of a frog, it first causes contraction of the vessels, especially the arteries, then quickly follows enlargement of the arteries and other vessels with very rapid motion: after a while, the vessels gradually contract, and return to their natural size. But if the stimulant application be repeated several times, so as to prolong the determination of blood into the part, the vessels do not then uniformly contract. The arteries indeed shrink, but the capillaries and veins remain congested, and thus present completely the condition given in our definition, excess of blood with diminished motion. This dilated state of the capillaries and veins must be chiefly ascribed to their losing tone after excitement, more than the arteries; but the process which I have been describing is accompanied by changes also within the vessels; numerous pale corpuscles adhere to the sides of the small vessels, and contribute to impede the current, and cause congestion by obstruction. Whenever the stimulus applied has been strong, this obstruction amounts to entire stagnation, and many vessels appear much enlarged, and filled with stagnant blood, or rather with an accumulation of red particles entangled in the coherent pale globules. For this reason, the vessels in which the blood is stagnant, are of a deeper red than others, the red particles being arrested whilst the liquor sanguinis passes on." (p. 183.)

Asphyxia causes accumulation of blood in the right side of the heart; and also, according to Dr. John Reid, there is obstruction to its passage through the systemic capillaries. The researches of Mr. Erichsen[1] have satisfactorily proved, in Dr. Williams' opinion, that the obstruction in the systemic capillaries is produced by the smaller arteries being excited to contraction by the venous blood, the veins at the same time becoming congested; and the obstruction in the pulmonary circulation is considered by the author to be susceptible of the same explanation. There is no evidence of spontaneous movements in the capillaries, nor of the vital attractions and repulsions described by Dr. Allen Thomson. Atony of the small vessels is a cause of congestion: and the manner in which this cause operates, has been ably demonstrated by the following experiment of Dr. Williams:

"To one of Read's enema syringes, was adapted a tube with two arms: to one arm was fitted a brass tube two feet long, having several right angles in its course; to the other arm was tied a portion of rabbit's intestine, four feet long, and of calibre, (when distended with water,) double that of the brass tube. The intestine was placed in curves and coils, avoiding angles and crossings, which might obliterate the canal. The discharging end of both tubes was raised to the same height, that of the intestine being kept open by a short tube of metal. The tubes were then both filled by successive strokes of the piston; and when they both began to discharge, the quantity received from each, in a given number of strokes, was ascertained. Without giving the details, it may be stated that the small metal tube discharged from two to five times the quantity discharged by the larger but membranous tube; the difference being greatest when the strokes of the piston were most forcible and sudden, by which the intestine, although much swelled at its syringe end at each stroke, conveyed comparatively little water. The difference was further increased by raising the discharging ends higher; and when

[1] Edinburgh Medical and Surgical Journal, No. 163.

both ends were raised to the height of eight or ten inches, the gut ceased to discharge, each stroke only moving the column of water in it, but this subsiding again without rising high enough to overflow. On increasing the force of the stroke, the part of the intestine nearest to the syringe burst. . . . These experiments shew that flaccidity and increased length and size of the tube, afford impediments to the passage of liquid through it; and although the experiments exaggerate the difference between healthy and relaxed or congested vessels, yet they really prove that the increased tortuosity and number of vessels in a congested part, the greater mass of their contents, and the atonic flaccidity of their coats, do truly form additional obstacles to the passage of the blood through them, although the amount of these obstacles will vary according to the state of the connected circulation.

"These experiments illustrate a principle that is too little considered in animal and general physics: the *loss* or *neutralization* of *force, by misdirection*. The bloodvessels, in their healthy condition, are so constituted as to make the most of the heart's propulsive power, and transfer it throughout their whole length; but when dilated, tortuous, flaccid, and otherwise altered, they misdirect and exhaust it (as in the experiment with the intestine): it is partly expended in distending and dilating the nearer portion, whilst a sufficiency does not remain for the onward propulsion of the blood, which therefore stagnates and accumulates in the congested vessels." (pp. 188-9.)

The Symptoms and Effects of Congestion may be either *in the congested part, or on the system*. The local effects consist in an impairment of the vital properties—contractility and sensibility; while pain, spasm, and morbid sympathies are often produced, but in a manner much less distinct and constant than in inflammation or determination of blood. In congestion of internal organs, pain is often absent: impaired nervous and muscular function is a more constant concomitant of congestion. The natural secretions are sometimes at first augmented: but very commonly congestion leads to an increased transudation from the distended capillaries, of the watery and saline part of the blood, with albumen, and sometimes with fibrin. The following explanation is given by Dr. Williams of the manner in which secretion is impaired by congestion:

"The portions of the vascular apparatus most concerned in supplying the secreting structure, seem to be the middle parts of the capillaries, which are often so turned or convoluted, as to receive the most direct force of the current from the arteries. But when congested, the vessels leading to the middle capillaries become yielding, loose, and tortuous, and the force is much expended in dilating these before it can reach the portions which supply the secreting surfaces or cells; these portions are in the condition of the distant end of the intestine in the experiment above related, not duly receiving the force of the current. Thus the more essential effect of congestion is to impair the natural secretion. But the distension of the congested capillaries sometimes leads to a general exhalation of their more watery contents, which mingling with the natural secretion, render it watery and sometimes albuminous." (p. 191.)

Extreme distension of the vessels is the principal element concerned in effusions: they occur often in hypostatic congestion, but chiefly in congestion from venous obstruction. The result of the congestion, however, as well as the nature of the effusion, is much determined by the condition of the blood; a watery state promoting transudation of fluid with but little albumen; while, if the blood be highly albuminous and fibrinous, inflammation may result, or hæmorrhage; or, under high pressure, fluid may be effused containing not only albumen, but self-coagulating fibrin also. This seems to Dr. Williams to be the true pathology of the "fibrinous dropsies" of Vogel and other German writers.

Fluxes, also, from congestion of high tension, exhibit a large amount of albuminous matter, as in bronchorrhœa, mucous diarrhœa, and leucorrhœa.

Albuminous urine is referred to congestion of the kidney, for the following reasons, which we think conclusive: "1. The urine often becomes albuminous, during great embarrassment of the circulation, in cases of organic disease of the heart or lungs, when the kidneys are otherwise healthy. 2. I have, in many instances, observed albuminuria during the cold stage of ague, and the congestive stage of eruptive fevers. 3. In granular degeneration of the kidney, the amount of albumen in the urine is augmented by circumstances causing congestion of the kidney, and is reduced by remedies suited to remove this. 4. The most common form of Bright's disease of the kidney, in its earliest stage, presents the appearance of a highly congested structure, and is excited by causes calculated to produce congestion; such as frequent irritation of the kidney by stimulating liquors—congestion from exhausted tone; continued exposure to cold, especially after the kidneys have been thus excited—congestion from intropulsion: scarlatina probably operates as the two last combined. 5. The albumen in the urine abounds most in the congestive (first) stage of Bright's disease; the vessels becoming more or less obstructed, in the progress of the disease, by a deposit of fibrin with granular cells in the tubules, and in some instances around them; which deposit, at the same time, perpetuates some degree of congestion, whilst it supersedes the proper secreting structure." (p. 193.)

Long continued congestion is liable to produce *hypertrophy.* This is not, however, of an uniform kind, comprising equal growth of all the textures; but an intervascular deposit from effusion of lymph, at first giving a mottled appearance, as in cirrhosis of the liver, then contracting and compressing the natural structure, and causing its condensation and atrophy. The plastic products of congestion seem to be further modified by determination of blood or inflammation, and by the state of the blood itself. Sometimes they are of a fibrous or closely compacted granular structure; sometimes loosely granular, or in irregular cells, with a predominance of fat globules, indicative of a degenerated condition of the plasma.

The Constitutional Effects of an extensive Congestion, are diminution of the quantity of blood in other parts of the body. Reaction, causing febrile phenomena, may occur; when vigorous, removing the congestion; but when weak, failing in this, but constituting a low feverish excitement. If reaction do not occur, the retention of the blood in the congested part injures it in its composition, and renders it a source of contamination to the rest of the blood.

In the *treatment* of Congestion, it is important to remove the causes. Removal of pressure from the vessels, in cases arising from venous obstruction; change of posture, in congestion from gravitation; pressure to support the weak vessels; and friction and exercise to aid the defective motion, as well as to give support—are indicated according to the circumstances of the case. Astringents promote the contraction of the dilated vessels, by augmenting their contractility or tone. Their utility, however, is limited by the fact, that they may be seen under the microscope to contract the arteries more than the capillaries and veins, and hence may increase the congestion; sometimes, however, reaction occurs, and converts the action of the astringent into that of a stimulant. Stimulants are often remarkably useful in removing congestion; in some cases when locally applied, as capsicum gargle to a congested throat, in others by exciting the general circulation. Some remedies act on particular organs, and remove congestion; thus mercury sometimes is a remedy for congested liver, some diuretics for congested kidney. Dr. Williams gives the following explanation of the influence of stimulants on congestion:—"A solution of capsicum applied to a frog's web, congested after previous irritation, causes an enlargement of the arteries, and an increased flow of blood to and through the congested vessels. This flow restores motion where it was deficient, sweeps away the accumulated blood, and, in some instances, causes the vessels to contract afterwards to their natural size; so that the

congestion is completely removed; in that case the cure is complete. In other instances, however, the stimulants fail to clear the congested vessels; the enlarged arteries pour in more blood; but this not overcoming the obstruction, increases the hyperæmia, and may convert it into inflammation. Thus it appears that stimulants, as well as astringents, although occasionally proving remedies for congestion, sometimes tend to increase it; and this they are most likely to do when the congestion is extensive, or of long continuance, or when its causes are still in operation." (p. 198.) In such circumstances, depletion and evacuants are the remedies indicated. Blood-letting, by puncture or incision, in the congested parts; cupping, or leeches, in their vicinity; derivants to cause determination of blood to other parts, among which may be mentioned the removal of atmospheric pressure from a limb, as proposed by Dr. Arnott; or, the *hæmostatic* plan of Dr. Buckler, of Baltimore, which produces temporary congestion in distant parts, by the application of ligatures to the limbs—are all more or less useful. The necessity of employing depletory or derivative means before, or in combination with, stimulants, should be present to the mind of every one who has to treat cases of congestion of the liver, or kidneys, with interruption of their functions. Mischief is often done by an indiscriminate and exclusive use of mercury, or diuretics, in the attempt to restore the secretion of these organs. The remarks on the treatment of congestion are concluded with a few observations on those means, which, locally or generally, augment the tone of the vessels; *i. e.* cold, astringents or stimulants, and general tonic measures.

Determination of blood is defined to be Local Hyperæmia, with motion increased. After mentioning some examples of its occurrence, in health and in disease, Dr. Williams proceeds to enquire into its *physical* Cause; and states, that it cannot be an increased action of the heart, though this is sometimes present, especially when there is little blood in the system, or reaction is commencing after internal congestions; nor can it be increased action of the arteries—for the only active property which we know these vessels to possess, is that of slow or tonic *contraction*. The physical cause of determination of blood, is *enlargement of the arteries*; and this "is the effect of the pressure of the arterial distension from behind, acting on a tube which has lost some of its contractile power. The tonicity of the arteries makes them naturally resist the distending influence of the mass of blood pumped into them by the heart; but if the tonicity be impaired in any artery, that of other arteries forces into it the blood in augmented quantity, by which it is dilated, and becomes an enlarged channel for the transmission of more blood and more force. If the artery be thus enlarged, the capillaries and veins leading from it will be also enlarged, and will share the increase of blood and motion thus supplied to them. We find the proof of the enlargement and distension of arteries, leading to an inflamed or irritated part in their increased and hardened pulse; the coats of the vessel being stretched to tightness, the pulse is no longer softened by the usual elastic spring. So, too, in the frog's web, gently irritated by an aromatic water, we see the arteries become enlarged, supplying a larger and more impulsive flow of blood to the capillaries and veins, which all become enlarged also; and the whole vascular plexus, including vessels which before scarcely admitted red particles, then become the channels of a much increased current. This is determination of blood." (p. 203.) On irritating the frog's web, under the microscope, with a weak solution of capsicum, Dr. Williams observed, at first, a shrinking of the arteries; this is followed by their distension, and an increased flow of blood through them. When they begin to return to their natural dimensions, the arteries sometimes assume a more tortuous shape than before, as if they contracted in diameter before their length is proportionally reduced. An objection has been made, that Dr. Williams assumes enlargement of vessels to be the cause, both of increased motion (in determination), and of diminished motion (in congestion). This he answers by shewing that,

in the former case, the enlargement is in the arteries, which are exposed directly to the propulsive power of the heart; while in the latter, the veins and capillaries are enlarged, while the arteries are not so, or are even contracted, and thus more or less inadequate to transmit the force of the heart.

As to the *physiological* cause of determination, it is true that in some cases there is previous contraction of the arteries; but this will not always hold good. The effects of the nerves, on the contractility of the vessels, requires further investigation. Dr. Williams admits that they may be concerned in causing determination of blood, probably by reducing the contractility of particular arteries; but dissents from the opinion, supported by Dr. Billing, that contractility is derived from nervous influence. The *final* cause of determination of blood is to support the well-being and function of a part. If it be moderate, it increases the redness, warmth, sensibility, and other functions; if in excess, it disorders and alters them.

Some causes of local determination of blood, act in distant parts of the vascular system. Cold is an example of this, chiefly in persons endowed with much irritability of heart, and with but little blood. Determination is often accompanied by symptoms indicating deficiency of blood in other parts of the body; and this furnishes an important therapeutic indication.

The General Symptoms of Determination of Blood, are described by Dr. Williams, as consisting in exaltation of the nervous properties and natural secretions of the part. The nutritive process is only affected when the determination is constant or often repeated; and then the hypertrophy, which results, is of a more simple and uniform kind than that arising from congestion. The process of absorption, though favoured when the current is accelerated without distension, is often unequal to the effusion. The parts most subject to determination of blood are those nearest to the heart, and those most freely supplied with blood-vessels. In determination of blood to the *head*, two series of symptoms occur in different cases, in addition to the increased beating of the carotid and temporal arteries, flushing, and increase of the symptoms on stooping,—the one series of symptoms being those of simple excitement of the nervous centres, the other indicating a temporary oppression of nervous function, occasionally with various convulsive affections. The explanation of this is to be found, according to Dr. Williams, in the fact that moderate excitement will produce an increased, but equal flow of blood through the head; but if the excitement be in excess, blood is forcibly conveyed to the brain, without an equal increase in the passage of the blood through it; and this for two reasons:—"1. We have already found that a certain proportion in the size and elasticity of the vessels best qualifies them to transmit blood freely; and that where this is wanting, increased force does not compensate for it, but often causes new disorder. Thus, in violent palpitation of the heart, the aorta, carotid, and subclavian arteries, are often dilated, and throb strongly; but the weak pulse at the wrist shews that much force is expended on the larger trunks, without reaching their distant branches. This, too, is one reason why, in determination of blood to the head, the force is sometimes more expended on the larger vessels at the base of the brain, than transmitted throughout its substance. 2. Another reason for unequal or defective excitement from determination of blood to the head, is the unyielding nature of the skull, which permits no considerable enlargement of any of the vessels within it, without a corresponding diminution of other vessels, and a general compression of the cerebral substance. Hence distension of the arteries, beyond a certain degree, will compress and obstruct the small veins, and thus prevent that freedom of circulation on which functional activity depends. On these principles may be explained the production of symptoms of depressed, as well as of excited energy of the nervous centres, and often a mixture of both, from the same cause—determination of blood." (p. 209.) The causes and symptoms of determination of blood to the *kidneys*, *mucous membranes*, and *skin*, are next briefly

noticed. Determination of blood is commonly transient; but when permanent, commonly leads to increased secretion in the immediate neighbourhood, or hæmorrhage, or inflammation. Distant parts are at first cold, but afterwards subject to febrile reaction. If long continued, it may produce hypertrophy—either natural, as in muscles; or degenerated, as in the kidneys and liver. In these cases, the effect is commonly modified, by the presence of congestion and inflammation, and the plastic condition of the blood itself.

In the *treatment* of determination of blood, an obvious indication is, when possible, to remove the exciting causes. The proper remedies are considered by Dr. Williams, under the heads of cold and astringents, to promote the contraction of the distended vessels: derivants, to draw away the blood by relaxing other parts of the vascular system, as purgatives, and especially bleeding, where determination to an important organ is combined with some plethora or local congestion; antimony and similar remedies to produce a general relaxation of the tonic fibres of the vascular system, and an equalization of the force and blood conveyed by it; sedatives to reduce the heart's action; and tonics, where determination obviously results from weakness of the circulation, to give tone to the contractile fibre, and improve the quantity and quality of the blood. These remedies require judicious combination according to the circumstances of the case: and the secretions are to be kept free and equally balanced. In all cases, country air and exercise, suited to the strength, is beneficial; and habits of posture opposed to the peculiar determination should be enjoined.

The results of HYPERÆMIA are next treated of, under the heads of HÆMORRHAGE, FLUX, and DROPSY. These are conditions to which plethora, congestion, and determination of blood tend, when yet short of the conditions necessary to produce inflammation.

After noticing the production of HÆMORRHAGE from general plethora, congestion from venous obstruction, weakness of the vessels, or from the intropulsive operation of cold, and from determination of blood, Dr. Williams observes, that "all cases of general or local hyperæmia, now noticed, do not result in hæmorrhage: some additional element is wanting; and this additional element may be either in the *blood-vessels* or in the *blood*." The blood-vessels may be inelastic or fragile from osseous or atheromatous deposits, or aneurismal dilatation; or softened and lacerable from inflammation or malnutrition; or they may be opened by actual ulceration or suppuration. Mechanical injury may also cause rupture of blood-vessels. Sometimes the blood is defective in fibrin, but abounding in red particles, as in petechial fevers, congestive apoplexy, hæmorrhagic small pox, and other exanthemata. But in other cases, the *quality* of the red particles and fibrin appears altered; this is probably the case in scurvy and purpura. There seems to be evidence of a diseased state of the red particles, in the readiness with which the textures become stained, and of want of contractility and plasticity in the fibrin, in the failure of the healing process. In those cases in which blood is poured out in considerable quantities, without rupture of large vessels, it is not probable that the blood particles can escape through the walls of the capillary vessels, but that many minute vessels become ruptured at once. In connexion with this, there is probably an altered state of the blood; and Dr. Williams observes, that "all cases of this description, which have lately come under my notice, have included an altered state of the blood, generally of the nature of uræmia or cholæmia." (p. 217.)

Besides differences in seat, hæmorrhages are distinguished into *active* or *sthenic*, arising from sthenic plethora, or from determination of blood; and *passive* or *asthenic*, occurring in connexion with asthenic plethora, or with congestion. In active or sthenic hæmorrhage, the full hard pulse of plethora is modified by a remarkable jerk or thrill, which is important when hæmorrhage is only suspected. This is ascribed by Dr. Williams to "an unusual abruptness of the heart's contraction, combined with irregularities in

the tonicity of arteries in different parts, which cause these to react in successive jerks at each pulse, instead of simultaneously." (p. 218.)

The effects of considerable hæmorrhage, especially if rapid, are cerebral or cardiac syncope, according to the posture of the patient, and a state of anæmia. In the reaction which succeeds, the pulse exhibits, most strongly, the jarring or vibratory character; and sometimes various symptoms of partial nervous excitement occur, as in anæmia. During reaction, the hæmorrhage may be renewed. If the hæmorrhage be inconsiderable, or be suddenly checked by styptics before the vascular fulness or determination have been reduced, inflammation may ensue; but if considerable, it may remove the hyperæmia, and the various local affections which it had produced. The effused blood may produce various disturbances in the parts into which it is effused; as is exemplified in the brain, lungs, glands, and other complex textures. Passive or asthenic hæmorrhage may produce relief if moderate, or exhaustion and anæmia if profuse; or reaction, sthenic hæmorrhage, or inflammation, may occur if it be too suddenly checked. The hæmorrhage connected with an altered state of the blood is generally asthenic, though excitement or determination of blood may come on here also.

In the *treatment* of hæmorrhage, it is to be borne in mind that it is often a salutary process, as in moderate epistaxis or hæmorrhoidal flux. But if it be profuse, it is to be restrained; the sthenic form by artificial bleeding and derivants, and the asthenic by styptics. In some cases, it requires immediate interference; as when it occurs in the lungs or brain; or is excessive in any form, or even moderate in very weak subjects. In *active* hæmorrhage, bloodletting is generally available, with evacuants, and remedies to reduce the power of the heart and the tonicity of the arteries. Cold is also an important remedy, when it is connected with determination of blood; but Dr. Williams does not approve of the practice recommended by some, of applying ice to the chest for hæmoptysis; he has seen pneumonia thus induced.

In *passive* or *asthenic* hæmorrhage, besides styptics, general or local depletion, with derivants, accompanied or followed by tonics, may be useful in relieving plethora or local congestion.

In all kinds of hæmorrhage, if the blood-vessels be diseased, the quantity of blood sent to them is to be diminished by bloodletting, pressure, posture, cold and astringent applications, and means calculated to tranquillize the whole circulation. Perfect rest, and a cool regimen, should be observed in all cases. The altered state of the blood is perhaps more influenced by styptics; some of which are astringents, causing contraction of the tonic fibres of the vessels and other parts, while others also coagulate the blood. These remedies may be applied either directly to the part, or may be administered internally when the bleeding part is beyond reach. Hæmorrhages from the intestinal canal, as well as in some other situations, are often relieved by increasing the proper secretion of the intestinal mucous membrane, and of the allied glands, by mercurial and saline purgatives, in combination with sulphuric or nitric acid, alum, and sulphate of zinc. These probably act also on the condition of the blood.

Effusion of the watery part of the blood, constituting, when in secreting organs or on open surfaces, FLUX, and when in closed sacs or cellular textures, DROPSY, is the next subject treated of. These may each be produced by general plethora, but commonly when the blood-vessels contain an inordinate quantity of watery constituents. Excessive drinking, or external cold, especially when the kidneys fail in performing their functions, may induce dropsy or flux; also the sudden suppression of a cutaneous eruption, or of the discharge from an old ulcer. Instances of the production of flux or dropsy, especially the latter, from venous obstruction, are numerous. Aneurism, tumours, pregnancy, and ovarian dropsy, may all cause ascites or anasarca by pressure on the large veins. The ascending cava has been found, by Dr. Williams and Dr. Watson, obliterated in cases of anasarca and ascites; and

M. Tonnelé's observations favour the opinion that chronic hydrocephalus is produced by a partial obliteration of the venous sinuses of the head. But the most common causes of venous obstruction, and hence of dropsy, or flux, are certain visceral diseases, as contractile disease of the liver, structural disease of the heart, and pulmonary congestion from causes impeding the respiration. Fluxes and dropsies may also arise from weakness of the circulation and atony of the vessels, or after previous excitement of the vessels of the part; fluxes may also be produced by the intropulsive operation of cold.

The production of fluxes, by determination of blood, is familiarly exemplified in the results of the application of local stimulants; but sometimes the flux may be referred to determination of blood without special irritation. Dropsy less frequently results from determination of blood, which seldom occurs in closed sacs, independently of inflammation. Tubercles may, however, produce dropsy in serous cavities, by inducing determination of blood. Fluxes and dropsies, as they both commonly arise from similar conditions of the vascular system, are often found to succeed to, and relieve, one another.

But, besides hyperæmia, certain conditions of the vessels, and of the blood, are required to determine the occurrence of flux or dropsy, as of hæmorrhage. Extreme or long-continued vascular distension may produce them; but sometimes they are out of proportion to the hyperæmia, and are then to be traced to a lax state of the vessels, or to a poor watery state of the blood, or to both these conditions together, as after long fevers, defective nourishment, or confinement in impure air. A watery state of the blood obviously tends to promote dropsy and flux, not merely by its greater proneness to exude through the walls of the vessels, but by the failure and irregular distribution of the force of the circulation, in consequence of the watery and squashy nature of the blood.

In connexion with the subject of impoverished blood, in its relation to dropsy, Dr. Williams makes some valuable remarks on imperfect excretion, as a cause of this condition. Failure in the function of the kidneys appears to be essential to the production of dropsy from cold; mere checked perspiration may cause congestions, hæmorrhages, and even fluxes; but if the kidneys be healthy, dropsy will not ensue. Dr. Williams thus explains the occurrence of dropsy and albuminuria from exposure to cold after intoxication: "The vital properties of the kidneys had been exhausted by the excitement of the stimulant beverage, so that when cold checks the perspiration and throws the blood on internal organs, the kidneys cannot perform their vicarious action; their vessels become distended with blood, and mechanically exude serum instead of separating the proper constituents of urine: these and the superfluous water accumulate in the blood, and, by their quantity and irritating quality, cause effusions of serum containing urea in different parts of the body, as well as various other functional disorders." (p. 229.) The occurrence of dropsy after scarlatina he considers to depend on a diseased action of the kidney. He remarks, in common with many other observers, that the anasarca is not always in proportion to the amount of eruption; and supposes that scarlatina causes in the kidneys a highly congested state, which injures their secreting power.

The dropsy which arises suddenly after exposure to cold, or scarlatina, has received the name of inflammatory, febrile, acute, or active dropsy. So far as these terms imply an excited state of the vascular system, they cannot be objected to; and that such a state exists, is proved by the buffy coat of the blood drawn, and by the effusions being often accompanied by symptoms of inflammation. This character appears to depend on the irritating quality of the excrementitious matter left in the blood; and Dr. Williams traces analogies between the effects of retention of urea, and of lithic and lactic acid (gout and rheumatism). Besides the retention of urea, there is a loss of albumen from the blood, especially in the more chronic cases and in anæmic subjects, in whom almost every congestion or determination of blood ends in

watery effusion. The effusion in these cases is, as the powers of circulation fail, connected chiefly with gravitative congestion; and affords a contrast to that which accompanies acute albuminuria, which affects the face, trunk, and upper extremities. From his observations, Dr. Williams infers that dropsy may be described as acute, active, or sthenic, arising chiefly from the retention in the blood of excrementitious matter and water, which the kidneys fail to eliminate; and passive or asthenic, often originating in the same way, but rather dependent on a poor and watery state of the blood, especially deficient in albumen. He shows, also, that dropsy may arise from an impoverished state of the blood, independent of renal disease. Having so far traced flux and dropsy in common, Dr. Williams states the chief pathological cause of general dropsy to be a diseased condition of the blood, dependent on defective excretion, or on defective nutrition or assimilation. Flux is more commonly associated with a lax state of the solids. Hence flux is generally a more partial disease than dropsy. The matter effused is not so much an excess of the natural secretion, as an addition of a thin, watery, and sometimes albuminous fluid from the blood.

In the general *treatment* of flux and dropsy, we have to apply the remedies for the several varieties of hyperæmia which may be present, and to vary our treatment according to the sthenic or asthenic character of the affection. The success will depend much on the power we possess of correcting the morbid condition which has caused the flux or dropsy. In causes resulting from vascular congestion or fulness, depletion, followed by remedies to increase the secretions, are most efficacious; but where there is a relaxed state of the solids, and a watery condition of the blood, a tonic plan of treatment is indicated, at the same time that we endeavour to derive from the affected parts, and to restore defective excretions.

In all cases of flux, it is proper to derive from the affected part; to avoid circumstances which promote congestion in it; and sometimes to counteract or remove the irritations or obstructions which the flux causes in the parts which it affects. The distinction in the treatment of sthenic and asthenic flux is clearly pointed out. In the former case, where the disease borders on inflammation, it is improper to attempt to check the disease by astringent remedies; but evacuants, antimonials, sedatives, and even blood-letting, are indicated. In asthenic fluxes, which form the majority of cases, astringents, stimulants, opium, and general tonics—medicinal and hygienic—are indicated: and Dr. Williams points out the propriety of avoiding excess in liquid food, especially tea and warm slops. These fluids cause a temporary plethora, which finds vent through the lax vessels of the weak part.

In acute or inflammatory dropsy, which is associated with renal congestion, the remedies are at first, blood-letting, especially by cupping to the loins, hydragogue purgatives, and diaphoretics; then some kinds of diuretic medicines. Of the hydragogues, cream of tartar in doses of ʒiv to ʒx, every morning, or alternate morning, and elaterium in doses of gr. ¼, are the most effectual. Blisters may be used after cupping to the loins, or even at once, in asthenic cases, which do not bear much loss of blood. After the use of depletion, cathartics, and diaphoretics, diuretics become useful; and Dr. Williams thinks the tincture of cantharides, in doses of m x to m xx, or ʒss, thrice a day, the most powerful. But if it irritates the kidneys, without increasing the circulation, it is sure to do harm. Mercury is of doubtful utility in removing congestion of the kidney, as it so speedily and severely salivates in such cases. But in combination with squill, digitalis, and henbane, or conium, it is most useful in all other recent cases of dropsy. Together with these remedies, tonic and supporting treatment is indicated in the asthenic and chronic forms of dropsy; and in those cases arising from permanently diseased heart, liver, or kidneys, which have a tendency to recur again and again, it is needful to vary the remedies, as well as to support the strength. "It is an important point, in the treatment of such cases, not to exhaust the

powers of any secreting organ by too long acting on it, and not to expend the efficacy of any one remedy by too long continuing its use. By employing sometimes diuretics, sometimes purgatives, sometimes diaphoretics, and by aiding each of these, by local depletion or derivants, or by stimulants and tonics, according to the temporary prevalence of vascular fulness and excitement, or the converse, much may often be effected to prolong life. It is in the application of these rules to the treatment of prolonged cases, that the skill and resources of the rational practitioner are most tried, and his superiority over the routinest is best proved. It is under these circumstances, too, advantageous to have at command a great variety of medicines, particularly diuretics, and to alternate them or vary them in order to increase or maintain their effect. Those that I have found most effectual are—combinations of mercury, squill, digitalis, and conium (not in acute albuminuria); combinations of decoction of broom, or pyrola umbellata, with nitrate and acetate of potass; the juice or extract of taraxacum, with the same salts or bitartrate of potass, or with nitric acid (particularly in hepatic disease); infusion or tincture of digitalis, with iodide of potassium, and bitartrate of potass (in dropsy after scarlatina); the same, together with increasing doses of tincture of cantharides (in asthenic cases of albuminuria, after cupping to the loins and hydragogue purgatives); ammonio-tartrate and ammonio-citrate of iron in Seltzer water (in asthenic dropsy); gin in cream of tartar beverage (imperial); compound spirit of juniper, spirit of nitric æther, with various others (in cases of debility). The latter stimulant diuretics have disappointed me more than any of the rest." (pp. 241-42.) When diuretics and other remedies fail, relief must be afforded by giving exit to a portion of the fluid; and in performing acupuncturation, the tendency to low inflammation and gangrene should be remembered.

The subject of LOCAL HYPERÆMIA, WITH MOTION PARTLY INCREASED, PARTLY DIMINISHED, constituting INFLAMMATION, is next fully and most ably treated of by the author. After some remarks on the definition of the term Inflammation, he proceeds to consider the Predisposing and Exciting Causes. The latter are either *local* irritants, mechanical, chemical, and vital, acting chiefly where there is a previous excited state of the vascular system—causing determination of blood; or *general*, acting indirectly on a depressed state of the whole vascular system—producing congestion. The various local and general causes are enumerated; and their mode of operation examined. Some causes (irritants) probably operate first on the nerves, for the following reasons:—1. Their action on the sensitive nerves is felt long before inflammation begins. 2. The irritation is sometimes transferred to other parts by sympathy. 3. An injury to a nerve is sometimes followed by inflammation in parts connected with this nerve; thus paralysed limbs are apt to become inflamed. But, on the other hand, Dr. Williams observes that—"1. Some of the causes of inflammation (the majority of those inducing internal inflammation) produce, on the nerves and nervous system, no known primary effect, which resembles that of other causes of inflammation (irritants): thus inflammations excited by cold, are often preceded by no marked constitutional disturbance; whereas the strongest impressions of cold on the system are frequently not followed by inflammation. 2. Inflammations often originate in congestions, and in the sudden suppression of hæmorrhages, and other discharges, without the occurrence of any symptom referable to the nerves; hence inflammations thus arising may escape detection, and are called *latent*. 3. Persons in whom nervous properties are most developed, are not those most susceptible of inflammation, and all varieties of nervous excitement are sometimes manifested in the highest degree without any inflammation ensuing. . . . 4. Inflammation readily occurs in parts, the nerves of which are paralysed, or have been divided." (pp. 249-50.) It is here to be concluded, that an impression on the nerves, is not an essential part of the first process of inflammation. Having noticed the causes, Dr. Williams proceeds to explain

the Nature and Phenomena of Inflammation. There is evident proof of enlargement of the blood-vessels in an inflamed part, of determination of blood to it, of increased motion through it;—so far determination of blood is proved to be present. But, also, as has been shown by Thomson, Hastings, Kaltenbrunner, and Marshall Hall, there is more or less *obstruction* to the flow of blood in the inflamed vessels. "Thus in the frog's web, when a part inflames from local irritation, the blood is seen to move slowly in the part most irritated, and gradually accumulating in the vessels, renders them larger, redder, and more tortuous, until the motion ceases altogether in them, whilst neighbouring vessels are still the channel of an increased current." (p. 232.) The obstruction has been ascribed to various causes, as spasm of the extreme vessels, weakness of the capillaries, active dilatation of these vessels, or vital attractions and repulsions between the blood and the solids. These theories are discussed by Dr. Williams, and dismissed by him with the following observation:—"If we succeed in explaining the nature and effects of inflammation, by a reference to ascertained properties, it will be needless and unphilosophical to assume the existence of others, which are mysterious and unknown. We do not pretend to propose these explanations as complete or certain, but as the best that we can devise in the present state of science, and the most consistent with well established facts; and it is very satisfactory to observe, that the discoveries in chemical physiology, made since the first edition of this work was written, so far from invalidating these views on the nature of inflammation and its results, go far to confirm and extend them." (p. 255.) The cause of the stagnation, must be either in the vessels, or the blood, or in both; and the latter is the true cause. With regard to the state of the vessels, atony and flaccidity impede the current, not by preventing active contraction—a property which does not exist—but by removing the tone by which the vessels maintain the calibre and tension best calculated to transmit the force of the current. "Vessels thus weak and inelastic, instead of equably conveying the current, become distended, lengthened, and tortuous, in receiving it; and by their very mass, as well as their inelasticity, they partly break the force of the current, and partly turn it into other channels. . . . In determination of blood, the arteries are enlarged, and so are the capillaries in due proportion; the circulation is therefore equally increased. In congestion, the capillaries are enlarged, without any increase of the arteries; the motion is therefore impaired; but still, being gentle, it may diffuse itself through the mass, which moves slowly. But if to congested capillaries, there be added the increased and abrupt force of the current from enlarged arteries, or if to determination of blood (enlarged arteries), an atonic congestion of the capillaries be joined, the propulsive power of the current will be impaired. As in the experiment with intestine, the blood will pulsate, or oscillate, in the distended vessels, rather than pass through them; and the main current will pass through collateral anastomosing channels, which become the seat of simple determination or increased flow. This is just the state of things in the incipient stage of inflammation; and if either the capillaries do not speedily recover their tone, or the arteries do not contract, the blood in parts becomes stagnant, its particles adhere to each other, and to the walls of the vessels, and the obstruction is confirmed. The arterial portions of some of the obstructed capillaries are still open, and exposed to pulsative force from the supplying arteries, which continues to strain their coats, and cause an oscillatory motion of their blood particles, but no passage through them. Such are the phenomena which we see under the microscope." (pp. 256-57.) One cause, then, of the stagnation of the blood in an inflamed part, is a weak inelastic state of the capillary vessels, such as exists in atonic congestion;—and many causes of inflammation, even irritants, act by first producing congestion. But there are also changes in the condition of the blood within the vessels. Dr. Williams and Dr. W. Addison, in their microscopic researches on inflammation, have noticed an increase in the

number of white globules, under irritation; these roll slowly along the side of the vessels, with a great tendency to adhere to them, and may become so numerous, as to prevent the red particles from passing. Hence the chief cause of obstruction, as regards the blood, seems to be comprised in the two circumstances—"the *increased production of the white globules*, and *their remarkable disposition to adhere to the walls of the vessels and to one another*." These white corpuscles are spheroidal, of a gelatinous consistence, and composed of granules, some of which have the appearance of nuclei; and, according to Dr. Addison, they are invested by a granular membrane. They appear to consist of fibrin, or rather, deutoxide of protein; and each granule has probably a central nucleus or molecule of fat. Their increase seems to be not merely from their being arrested in their transit through the inflamed vessels, but from their being actually formed in greater numbers; and Dr. Williams is of opinion, that the determination of blood is sufficient to account for the oxidation of the protein in the obstructed portions, and its conversion into the deutoxide. Their tendency to adhere to the walls of the vessels he considers to be the mere result of the physical property of adhesiveness, common to soft solids of glutinous material; and those first formed in inflamed blood, do not appear to him to be provided with an envelope. The red particles, according to Dr. Williams, as long as they can pass, *shew no disposition to cohere, or form rouleaux*; but if the white corpuscles obstruct their path, their flexible and elastic bodies become jammed by the current from behind, in the interstices of the white corpuscles, so that the whole vessel speedily presents an almost homogeneous deep red colour.

From his experiments and observations, Dr. Williams concludes that, "the most essential character of inflammation consists in an increased motion or determination of blood to the affected part, with a more or less obstructed flow through the part: the force of the increased motion being partly expended in the arterial portion of the dilated capillaries, and partly diverted into the collateral channels so abundantly supplied by the anastomosis of vessels. The obstruction in the vessels of an inflamed part we have found reason to ascribe in part to the increased mass in the smaller vessels, and to the diminished elasticity of their coats; and in part, to the unusual formation of white corpuscles, which adhere to the walls of the tubes, and to each other. Of the exciting causes of inflammation, the direct irritants seem to produce obstruction in both these modes; those which act indirectly, on the other hand, in the first instance produce congestion—to which determination of blood being subsequently added, the inflammatory process begins: hence the latter causes, although very common, are not so sure of exciting inflammation as direct irritants are.

"The effect of these changes, essential to inflammation, is, to expend much of the circulating force conveyed by the arteries on their capillary terminations: and the enlargement and tortuosity of these capillaries, the production of globules which adhere to their sides, and their total obstruction by the same means, seem to be so many progressive expedients used by nature to direct the force of the circulation to that part of the vessels by which the process of reparation and nutrition is chiefly carried on. We have further suggested, that an obvious effect of this local direction or determination of force, is to supply oxygen more freely to the plasma, and the resulting formation of a solid deutoxide of protein, is the obvious explanation of the formation and increase of those white corpuscles which augment and complete the obstruction." (pp. 265-66.)

In inflammation, the impairment of vital properties arising from determination and congestion will be not only combined, but exaggerated, and it is this approximation of two such opposite conditions, excitement and interruption of living actions almost at the same spot, that renders continued inflammation so seriously destructive to structure, as well as to function. Deferring, for the present, the consideration of the general symptoms pro-

duced by inflammation, Dr. Williams notices at some length the change in nutritive secretion, a most important and early part of inflammation. The effusions from inflamed vessels at an early period, resemble those from congestion, or determination of blood; but they are commonly more abundant, and contain more animal matter. Fibrin is effused; which may concrete, or remain dissolved in the effusion, forming a clot when this is removed from the body. In complex textures it produces hardening, and in mucous membranes there may be thickening of the submucous texture, and unusual viscidity of the secretion. The following is the summary given by Dr. Williams of the forms of solids in inflammatory effusions, as seen under the microscope:—"1. *Molecules*, immeasurable from minuteness, each appearing merely as a dark speck. Probably composed of a fatty matter (Davy, Gulliver.) (*Smaller primitive molecules;* Gruby.) 2. *Granules* (Gerber, Addison), measuring from 1-12000 to 1-8000 of an inch, appearing as a light spot, surrounded by a dark circle. Probably consisting of deutoxide of protein, with a central molecule of fat. (*Larger primitive molecules;* Gruby.) 3. *Fibrils*, extremely fine, interlaced and decussating, the same with those seen in the buffy coat of the blood. 4. *Lymph or exudation corpuscles, compound granules, granular cells*, measuring from 1-6000 to 1-700 of an inch (Gulliver), composed of granules and molecules, and sometimes enveloped in a cell. 5. *Pus globules* appear to be enlarged modifications of the last; but more distinctly cells, containing liquid with more or fewer granules, some of which are of larger size than the rest, and forming nuclei. Besides the solid deutoxide of protein, which constitutes these solid parts, they contain a dissolved form of protein, the tritoxide. 6. *Irregular granular and hyaline matter;* the former of albuminous composition, with more or less fat: the latter also albuminous, with more or less gelatine. These constitute the materials of tuberculous and other aplastic or cacoplastic deposits. They often exhibit traces of cells and fibres, but appear degenerated or imperfectly formed. In addition to the above, inflammatory effusions usually contain the usual solids generated by the part, such as mucous globules, epithelium scales, epidermis, and also blood corpuscles." (pp. 268-69.) There is a close resemblance between the exudation corpuscles, and the white globules, seen in the vessels; but the opinion of Dr. Addison, that the latter pass bodily through the walls of the vessels, seems scarcely tenable; and the author thinks it more likely, either that extremely minute nuclei, or molecules, do pass through the walls, and then grow and propagate compound granules; or that corpuscules are formed by coagulation in the effused liquor sanguinis. These solid products are the materials which give rise to new membranes, textures, and deposits; and possess every variety of plasticity, from perfect cicatrices and false membranes, down to yellow tuberculous matter. The results of the effusion, which always attends inflammation, may be relief of the inflammation; otherwise it may produce *softening, suppuration, sloughing, gangrene, sphacelus*, or *induration*.

The Local Symptoms of Inflammation—redness, heat, pain, swelling, and impaired function, and the General Symptoms, constituting inflammatory fever, are next noticed; but we must content ourselves with recommending our readers to peruse the observations made by Dr. Williams on these subjects, and proceed to analyse his remarks on the Nature and Symptoms of the Terminations, or Results of Inflammation. These are classed under four heads:—Resolution, Effusion (including Adhesion), Suppuration (including Ulceration), and Gangrene.

Resolution consists in the removal of the inflammation and its effects, and may occur spontaneously, or from treatment; or there may be what is called metastasis, which Dr. Williams ascribes to the mobility of the peculiar *materies morbi*. It seems uncertain whether the lateritious sediment in the urine, at the decline of inflammatory fever, is a cause or effect of the improvement. It appears, however, that though the function of the kidneys must be first

impaired, yet the matter retained in consequence, tends to keep up the disorder; and by promoting its elimination, we best succeed in reducing febrile excitement. When the function of the kidney is impaired by congestive degeneration, inflammatory and other fevers often prove fatal to the patients.

Effusion is not always a termination of inflammation, but often produces mischievous effects. In the *serous membranes*, we find, according to the degree of motion permitted, bands or threads, films, granules, or patches. The lymph thus effused is at first transparent; afterwards it becomes yellowish, and more or less opaque, but in inflammation of a healthy subject generally retains some degree of translucency. In this respect it contrasts with the opaque purulent and tuberculous lymph effused in unhealthy subjects. Its most important character is its organizability, which character Dr. Williams designates by the term *euplastic*. It consists of fibrils of fibrin crossing each other, with numerous simple and compound exudation corpuscles; and after being arranged into the basis of a texture, it is supplied with blood-vessels. How these vessels are formed, is scarcely determined. *Cacoplastic* lymph is the product of inflammation of a low character, when the blood is poor in red particles; and constitutes the formations known as cirrhosis and crude yellow tubercle, which are the lowest of the organizable products. These deposits sometimes exhibit traces of blood-vessels, but sometimes are totally destitute of vascularity. "Being, in organization and consistency, dissimilar to the membranes on which they are formed, they prove a source of irritation and constriction; and being liable to ulterior changes (shrinking and contraction in the case of cirrhosis; further degeneration and softening in the case of yellow tubercle), they may bring further mischief in contiguous parts." *Aplastic* lymph is totally incapable of organization, and is thrown off in the form of pus; or in detached opaque flakes or curds, consisting of aggregations of irregular granules, oil-globules, and molecules, held together by a few fragments of fibrils. These products obviously act prejudicially on the structures which contain them; and are little susceptible of absorption. The plasticity of lymph may be lowered by a low form of inflammation, and an unhealthy character of the blood: also by long continuance of any inflammation, or by its occurrence in subjects in whose blood fibrin abounds, while the red particles are scanty,—the effused product being either gradually removed beyond the reach of vascular communication, or being of low vitality. The admixture of the colouring matter of the blood—probably in a diseased state—tends to lower the plasticity of lymph. It sometimes, according to Mr. Dalrymple, tends to accelerate its organization.

The products of inflammation of *mucous membranes*, according to Gerber, Henle, and Gruby, "microscopically consist of pus and mucus globules, granular cells, granules, and molecules, together with more or less amorphous and glutinous mucus, and scales of epithelium." Dr. Williams states that serum is present in the early stage; and at an advanced stage there is an increase of fatty matter. There may also be effusion into the submucous tissue, giving rise, if not removed, to indurations and strictures.

The products of inflammation of the *skin*, *cellular texture*, and *parenchymatous organs*, are next briefly noticed.

The effects of effusion may be to aggravate some of the symptoms of inflammation, while others are more or less relieved; and the relief afforded to the inflammation may be counterbalanced by the exhaustion produced in the process of throwing off the effusion. The effects will be more harassing where, as in some cases, the effusion fails in relieving the inflammation.

Dr. Williams commences his remarks on Suppuration and Ulceration with a description of pus, and of its constituent corpuscles. He considers, with Mulder, that the disintegration and liquefaction which take place in the formation of pus, seems to depend on an increased oxidation of the protein, so that it passes from the state of solid deutoxide to that of soluble tritoxide. There is also a reduction of vitality, and tendency to degenerate, in the

exuded corpuscles. The circumstances which determine suppuration, as a result of inflammation, are chiefly three: 1. A certain intensity and duration of the inflammation, which, by exaggerating the salutary effects of determination of blood and obstruction—oxidation of the protein into an organizable material—gives an ascendancy to the chemical over the vital powers. 2. The access of air to a wound favours the formation of pus; chiefly, doubtless, by directly supplying oxygen, but also probably by operating as an irritant. If admitted in limited quantity to a large collection of pus, air gives rise to decomposition. 3. A peculiar condition of the blood promotes the formation of pus: this is called the *suppurative diathesis*, and is presented in cachectic or ill-conditioned subjects. Dr. Williams believes that the most common cause of this is the presence of pus in the blood itself: this product having been found in the blood, and probably existing therein in all cases of suppuration. The discovery of *purulent deposits*, especially in the lungs and liver, affords a proof that pus in some way is often conveyed in the circulation, and, being arrested in these organs, gives rise to the formation of more, and to the production of most formidable effects. In explaining the presence of pus in the blood, it is not to be supposed that it is absorbed through the walls of the blood-vessels; but it may get into the blood either by an opening in a vein, or by suppurative phlebitis, or, as shown by Mr. Gulliver, by being formed within the blood-vessels in other cases of severe inflammation. Some remarks on HECTIC FEVER and on GANGRENE follow.

The VARIETIES OF INFLAMMATION are next noticed. Under this head, Dr. Williams treats of the following varieties: *sthenic* and *asthenic; acute, subacute*, and *chronic; congestive; phlegmonous; erysipelatous; pellicular* or *diphtheritic; hæmorrhagic;* and *scrofulous;* and merely alludes to the specific inflammations—*gouty* and *rheumatic, syphilitic*, and *gonorrhœal*. From the remarks here made, we can only extract, as a specimen, the following explanation of the symptoms which attend the worst forms of *erysipelatous* inflammation: "These adynamic or typhoid symptoms show the presence of something more than a form of inflammation, and that something must be considered to be a poison. It is probable that this poison sometimes originates in infection; for persons in the same room, or who have had much communication with a patient with erysipelas, have been more frequently attacked than others; but it is also pretty certain that bad ventilation, and a crowded, uncleansed state of surgical patients, are capable, at any time, of rendering common inflammation erysipelatous; and this effect is much promoted by unknown epidemic conditions of the atmosphere. The most probable hypothesis which we can form of this matter is, that, under certain circumstances, the products of inflammation become (as we know they sometimes do) poisonous, and capable of acting (as many animal poisons do) as local irritants and general sedatives or depriments; that they then modify the character of the inflammation, and depress the whole vital powers (as we have found pus and gangrenous matter do); and that their effects, and the general and local reaction against them, lead to the various degrees and forms which we find erysipelatous inflammation and its accompanying fever present. The same morbid matter, being transferred by any of the three modes of infection to other persons, may induce erysipelas in previously existing inflammation, or, if strong enough, may develope it anew in the body. The fact that patients often *sicken* with fever (rigors, vomiting, headache, quick pulse, delirium, etc.) before the erysipelatous inflammation appears, is a sufficient proof that the poison acts on the constitution as well as on a part; and the fact that weakly persons, and those with previous structural disease, (especially of the kidneys,) chiefly suffer from the worst effects of erysipelas, shows the essentially depressing operation of the poison. In several cases of the worst forms of erysipelas, I have found pus globules in considerable numbers in the blood of parts remote from the affected textures, which corresponds with the observations of Mr. Gulliver. This might suggest that pus is the poisonous mat-

ter; but although it is highly probable that these pus globules do partake of the septic tendency formerly noticed as belonging to foul kinds of matter, yet it is likely that the noxious matter occurs and spreads, in a more subtle form, in solution or even in vapour, as shown by the pernicious properties of the liquor puris, and its fœtid odour." (pp. 313-14.)

Treatment of Inflammation. A careful study of the elements of which the complicated process of Inflammation consists, will form the best guide to its rational treatment. The following table, which we copy from p. 322 of Dr. Williams' work, exhibits at one view the remedies which may be opposed to each of the elements and results:

TABULAR VIEW OF THE CHIEF ELEMENTS OF INFLAMMATORY DISEASE, AND THEIR REMEDIES.

CONSTITUENTS OF INFLAMMATION.	ANTIPHLOGISTIC REMEDIES.	
1. Congestion	Astringents; stimulants; evacuants	For incipient inflammation.
2. Irritation of nerves	Narcotics; counter-irritants	
3. — of vessels	Sedatives; derivatives; evacuants	
4. Determination to the part	Cold and other sedatives; derivatives; evacuants	For local inflammation.
5. Obstruction in the part;		
6. — by atonic enlargement	Remedies for congestion (see above)	
— by adhesion of corpuscles	Remedies not known; attenuants? sedatives?	
7. Distension of vessels	Counter-pressure; blood-letting; derivation	
8. Effusions	Evacuants; derivatives; operations; sorbefacients?	
9. Increased absorption	Direct remedies not known; stimulants; diminishing atmospheric pressure on the part?	
10. Impeded circulation in the part	Moist heat and other stimulants	
11. Increased circulation around	Remedies for determination (see above)	
12. Excitement of the heart	General blood-letting and other evacuants; sedatives	For inflammation with fever.
13. — of the arteries generally	General blood letting and other evacuants; relaxants (antimony, etc.); salines?	
14. Change of the blood:		
— by increase of fibrin	Blood letting and other evacuants; mercury; low diet	
15. — by diminution of the excretions	Evacuants; alteratives	
16. Exhaustion	Stimulants and tonics	For results of inflammation.
17. Depression from poison	Stimulants; antiseptics; evacuants	
18. Effused products of inflammation	Evacuants; attenuants; alteratives; sorbefacients? stimulants; pressure, and friction	

This table is followed by some valuable remarks on the remedies, arranged under the heads of the constituents of inflammation. In speaking of tartar emetic as a remedy of great efficacy, in inflammation with fever, Dr. Williams gives the following explanation of its action: "It seems to me, that the most reasonable view to take of its operation is, that it chiefly acts by diminishing the tonicity of the vascular system. Small doses certainly relax the pulse and skin, and, where there is no fever, produce perspiration without stimulating. They also seem to increase the biliary and intestinal secretion. In inflammation and fever, larger doses are required to produce the same result; and as soon as the excessive arterial tension is relaxed, the chief part of the fever is removed. By thus reducing the increased tonicity of the arteries, the circulation is equalized and quieted, and the determination to and distension of the inflamed part are diminished; and the vessels generally are placed in the condition for their natural offices of secretion, which their extreme tension had before interrupted. It is quite possible that this operation of antimony, and another more directly exercised on the in-

flamed vessels, may be dependent on a chemical deoxidating influence attaching to the protoxide of the metal, as before hinted at; and this notion would account for the greater tolerance of the medicine under inflammatory disease, which involves a process of hyperoxidation. These views are, however, at present, no more than hypothetical, and might, with advantage, be tested by experiments on the lower animals." (p. 338.) The remarks on bleeding, and on calomel and opium, are highly instructive; and the whole observations on treatment of inflammation and its varieties, though incapable of further analysis in the space we have at command, will well repay careful perusal.

(To be continued.)

EXPOSITION OF THE CASE OF THE ASSISTANT-SURGEONS OF THE ROYAL NAVY. By a NAVAL MEDICAL OFFICER. pp. 28. London: 1849.

A case of greater hardship than that before us, or one more imperatively calling for redress, has seldom occurred. Year after year have the assistant surgeons engaged in Her Majesty's naval service petitioned and remonstrated against the false position in which they are placed, in being compelled to inhabit, on board-ship, that noisy and most uncomfortable den, the cock-pit, in the society of lads of from thirteen to eighteen years of age. They have been mocked with the phantom of the rank of lieutenant, and are supposed to hold a corresponding position to army assistant-surgeons; but with a pettiness of spirit and disregard of justice, which is most disgraceful, the authorities at the Admiralty have systematically denied to them all the solid advantages —small as they are—to be derived from that rank. Our brethren are now making a great effort to have their just claims acknowledged; and, by being made ward-room officers, to be placed on a proper footing. Most cordially do we wish them success. If the Lords of the Admiralty do not grant this act of justice, a time will come when their conduct will be bitterly regretted. Several of the most highly educated and most valuable assistant-surgeons have already retired from the navy in disgust. There is an almost total absence of candidates for the appointment. And should this state of things continue, and a war arise, it is melancholy to reflect on the position in which our officers and seamen will be placed; either committed to the tender mercies of incompetent persons, hastily procured to meet the emergency, or going into action with perhaps a single surgeon, where the services of three would be scarcely adequate to the demand for assistance. It is after a bloody battle that the value of skilful surgeons is felt; and so, perhaps, it will yet be discovered, when too late.

ON THE EXTRACTION OF TEETH; WITH AN ACCOUNT OF A NEW AND MUCH LESS PAINFUL MODE OF OPERATING. By HENRY GILBERT, M.R.C.S.I. London: 1849.

The object of this work is to bring before the profession and the public, an apparatus devised by the author for the extraction of teeth perpendicularly, or in the line of their axis. It consists of a chair, having a semicircular back, to receive the head of the patient. To the right side of this is fixed a steel bar, on which another bar slides at right angles, and attached to this is a flat piece of metal, which can be brought opposite to, or into, the mouth, to serve as a fulcrum for the forceps used by the operator. There is much ingenuity in the idea; but we are doubtful whether it will be found to answer in those difficult cases of curved fangs, where it is impossible to extract the teeth otherwise than by humouring them, as it were, and directing the line of force according to the situation of the resistance. Experience will show how far this particular apparatus will answer. The principle is by no means new; and instruments of various forms have from time to time been devised for perpendicular extraction, but have been laid aside as failing to attain the object desired.

THE HUMAN BRAIN; its Structure, Physiology, and Diseases, with a description of the Typical Forms of Brain in the Animal Kingdom. By SAMUEL SOLLY, F.R.S., Senior Assistant-Surgeon to St. Thomas's Hospital. Second Edition, pp. 688. London: 1847.

We remember very well the pleasure we experienced in reading the first edition of MR. SOLLY'S work, in 1836. We were then fresher from the dissecting room; but now, twelve years later, with we trust maturer judgment, and a larger sphere of knowledge, the former gratification is scarcely diminished, while going over the pages of the second edition. Mr. Solly was undoubtedly one of the first and ablest pioneers, in making clear and intelligible the anatomy of the brain, as it is more generally taught. To him, perhaps, more than to any other man in this country, we owe the happy change from a mere jargon of words, to a rational and scientific nomenclature. The change in which he has been so instrumental, is, in this department of anatomy, very much like the change in botany, from the Linnæan to the natural system of study. It is an essential, as well as a nominal change. This ought to be a sufficient recommendation for Mr. Solly's labours. The following quotation is an admirable epigraph of the entire anatomical portion of the work. It is Mr. Solly's merit, that he has to a very great degree carried into execution that which he has here proposed:—"I have endeavoured, without presuming to arrogate to myself the credit of discovering any new system, to lay down a plan for the study of the anatomy of the cerebro-spinal axis, founded upon the rational basis of investigating its structure in man, by the light of comparative anatomy. The only philosophical method of simplifying and giving a character of general interest to the anatomy of the human brain, is by commencing with the structure and functions of a nervous system, in the lowest and simplest forms of animal existence, rising by degrees to the highest, carefully observing each addition of parts, and the relationship borne by these to an addition of function. By pursuing this course, we shall be rewarded by finding that the encephalon, this apparently most complicated organ in the human being, is but a gradual development from an extremely simple fundamental type on one uniform and harmonious plan, and that the seeming complexity of the cerebro-spinal axis in man, really arises from the great concentration, as opposed to the extreme diffusion of its component parts in the lower order of animals; for in no particular are the higher orders more strikingly distinguished from the lower, than in the concentration of function within circumscribed spaces." (Preface, pp. ix, x.) We can only briefly indicate the mode in which Mr. Solly has performed this task.

His First Subject is the STRUCTURAL ANATOMY OF THE NERVOUS SYSTEM, in which department he gives a good account, as far as anatomical knowledge has yet extended, of neurine in its various forms, namely, 1, the "grey, vesicular, pulpy;" 2, the "white, tubular, fibrous," and 3, the "sympathetic, gelatinous neurine." To these important subjects, in their various bearings, the first part of the volume is devoted.

In the Second part of the work, the COMPARATIVE ANATOMY OF THE BRAIN is traced, from its first appearance in the animal senses, up to its crowning development in the human cerebrum. We have the nervous centres evolved from its existence in the lowest forms of animal life. In the cryptoneura, no nervous system is discernible; in the nematoneura, the nervous system is a simple thread; in the homogangliata, all the ganglia are similar in size; in the hetero-gangliata, the ganglia are dispersed and separate; and lastly, in the myelencephala, there is the existence of a perfect brain and spinal marrow.

Parts Three to Ten are given to the HUMAN BRAIN. This is of course the most interesting part of the volume. The subjects most copiously treated of are, the protective apparatus, osseous and membranous; the cerebro-spinal fluid; the best mode of removing the brain and spinal marrow; the weight

and size of the human brain; the description of its figurative surface, and of its cavities; the plan of dissecting the cerebrum; the cerebral nerves; the cerebral circulation; the progressive development of the human brain; and lastly, the physiology of the cerebro-spinal axis. We give, in a brief quotation, the general results of the inquiry into cerebral physiology, which we believe to contain the expression of the best established facts of the present day upon the subject. These fundamental principles are arranged by Mr. Solly under five heads:—"1. That vesicular neurine is the source of power. 2. That medullary neurine is the conductor of it. 3. That medullary neurine is also the conductor of those impressions, which call forth the power of the vesicular neurine. 4. That the vesicular neurine is collected in masses of variable form and size—the *ganglia*. 5. That the medullary neurine is moulded into cords and bands—the *nerves* and *commissures*." (p. 329.) Above all, in the deficient parts of the cerebral apparatus, our author places the hemispheres, under the title of "the hemispherical ganglia." Of this portion of the brain, he says, "if there is one point in the physiology of the brain more unequivocally demonstrated than another, it is that these ganglia are the instruments of the mind—the portion of the brain in which sensations are converted into perceptions, and give rise to ideas. Comparative anatomy; developmental anatomy; experiments on living animals; observations on its size and form, as indicated by the size and form of the skull; and last, but not least, pathology,—all afford a mass of overwhelming evidence, that this portion of the brain, and this only, is the cerebral organ of intellectual power." (p. 335.) The first edition of Mr. Solly's work, was purely anatomical and physiological; but in the present edition, nearly one half of the volume is occupied with the PATHOLOGY AND TREATMENT OF CEREBRAL DISORDERS. We quote Mr. Solly's observations, explanatory of his devotion of himself, to what may seem a strictly medical subject:—"In undertaking this division of my subject, I am afraid that by some I shall be considered as stepping beyond the proper boundaries of surgical practice. To such I must observe, that every surgical disease requires more or less medical treatment; that no surgeon is competent to treat an injury of the head affecting the brain, who is ignorant of cerebral pathology; that the distinction between medicine and surgery is artificial; and that a distinction between diseases arising from external violence, and from internal disease, is false and mischievous. One of the first principles instilled into my medical mind by my respected master, Mr. Travers, was the necessity of studying medicine at the hospital, with the same diligence and attention as surgery. The interest I have felt from the time I first heard Spurzheim demonstrate the brain, in 1826, has induced me to attend to the pathology of this subject, more than perhaps I should otherwise have done. These observations are made, not to prove fitness for the task I have undertaken, but simply to explain, that I do not allow that the fact of my practising as a surgeon, is any excuse of incompetency." (p. 343.) All will agree with these sentiments; and the pathological disquisitions which follow, can produce no regret for the direction in which Mr. Solly's talents have been swayed. In his outline of the diseases of the brain, the arrangement adopted, is their division into Anæmic, Hyperæmic, Convulsive and Organic. Under these heads he discourses ably of delirium tremens, hydrocephalus, ramollissement, atrophy, apoplexy, epilepsy, and hypertrophy.

Mr. Solly's Treatise is valuable, for the clear anatomical and physiological views it contains, though we do not pledge ourselves to the entire adoption of the latter: his pathology and treatment are those of a sound and experienced physician and surgeon. The work is well illustrated with woodcuts, many of which are drawn, and some of them cut on wood, by Mr. Solly himself: and, unlike many modern works, it is accompanied by an accurate and copious index.

CYCLOPÆDIA OF ANATOMY AND PHYSIOLOGY: Parts XXXIV, XXXV. Edited by ROBERT TODD, M.D., F.R.S. London: 1849.

These two numbers embrace a variety of subjects, extending alphabetically from SECRETION to SLEEP. In a work so comprehensive as the *Cyclopædia of Anatomy and Physiology*, we do not expect to find all the articles of equal merit: and it is therefore not surprising that some of those now before us, fall short of the proper standard. The articles most deserving of notice are, SEMEN, by Drs. Wagner and Leuchardt; SHELL, by Dr. Carpenter; and SKELETON, by Mr. J. Maclise.

SEMEN. This article affords a valuable and very elaborate account of the subject of which it treats.

SHELL. Dr. Carpenter has enjoyed peculiar advantages for investigating the structure of Shell—a grant having been made to him, by the British Association, to enable him to carry out the necessary researches. We have here a summary of the results, profusely illustrated, and well deserving of perusal.

SKELETON is treated of at great length, under the archetypal theory. The researches of Professor Owen have, as is now generally admitted, demonstrated the advantages of this mode of studying the osseous system; but it must be acknowledged, that it requires a clear head and a cool judgment, to avoid running on the shoals of transcendentalism. Mr. Maclise carries the theory to its utmost extent; and we cannot help regretting that a subject, not easy of comprehension under any circumstances, should have had its difficulties vastly increased by the complex and abstruse style in which his article is written. It is overloaded with *Germanisms*: and many of the passages are so profoundly obscure, as to be far beyond the depth of ordinary readers.

DIGEST OF SEVERAL REPORTS ON SANITARY REFORMS. By WM. SIMPSON, Esq., Surgeon. pp. 23. London: 1849.

The title of this pamphlet sufficiently expresses the character of its contents. Its object appears to be, to impress upon the public the non-contagious nature of cholera, and the paramount importance of cleanliness, and the removal of nuisances, of all descriptions, which by contaminating the air, generate cholera and fever. Now, that the former disease is again among us, there are hopes of parochial and other public bodies awaking from their habitual lethargy, and taking prompt and efficient sanitary measures.

FRUITS AND FARINACEA THE PROPER FOOD OF MAN. By JOHN SMITH. Second edition. pp. 342. London: 1849.

The object of this work is to show that the majority of mankind have been, and still are, labouring under a sort of monster delusion; that, since the Deluge, they have entirely mistaken what was wholesome food, and are suffering the melancholy consequences. We are informed that the age of man has greatly diminished since he ceased to confine himself to vegetable diet; a fact, we confess, new to us. Having taken for granted, on his own interpretation of a few words in Scripture, that, previous to the flood, "fruits and farinacea" were the sole food of the human race, the author goes on to say: "Up to this period, man seems to have derived his support from the vegetable world alone; and upon this food, his life was prolonged to vast periods of time. According to the generally-received chronology of the Scriptures, the average duration of patriarchal life, previously to the deluge, was about nine hundred years. Immediately after the flood, when animal food was permitted as an article of diet, the average period of life was reduced to four hundred years; and when Jacob lived, it had gradually declined to one hundred and fifty years. This abbreviated period of human existence may not

have been the effect solely of animal diet; but it doubtless had a considerable influence." (!) (p. 17). In this conclusion few will concur.

One of the arguments employed by the author against the use of animal food is, that "the slaughtering of animals is opposed to the exercise of benevolence and sympathy." This doctrine strongly savours of the maudlin sentimentality so much in vogue at the present day, but of which we are no advocates. Did it never occur to Mr. Smith that the Creator has wisely provided means to check the undue increase of the inferior animals, and that one means by which this is prevented is by causing them to perform a most useful, as well as important, part in the great scheme of Nature, by ministering, in the first place, to the sustenance of mankind, and subsequently by assisting in the fertilization of the earth? As well might he argue that the tiger, who tears his prey limb from limb while still alive, or the boa constrictor, who gorges animals whilst living and struggling (as we have seen), are performing acts "opposed to the exercise of benevolence and sympathy".

It is not necessary to dwell at length upon this work. We give the author every credit for earnestness in the cause he advocates, and for labour in collecting materials; but we must say that as much, if not more, might, without difficulty, be written on the other side of the question. The golden rule in diet is *Moderation*. He who eats moderately of animal food, with a due proportion of vegetables, follows that course which, in our latitudes, is pointed out by Nature, and which is best adapted to preserve health and maintain strength.

THE DISCOVERY OF THE USE OF THE HAIR IN THE ANIMAL ECONOMY. By G. CALVERT HOLLAND, M.D., formerly Physician to the Sheffield General Infirmary. pp. 50. London: 1849.

The object of the author is to prove, that the great purpose intended by the HAIR in the animal economy is to act as a safety valve, by carrying off any excess of nervous influence, and as a means of forming "extensive and vital relations with the great principle pervading the universe." After a careful perusal of his work, we are of opinion, that the author entirely fails to make good his propositions; it is full of fallacies, and many positions are taken for granted which are incorrect. One, for instance, is, that the quantity of hair upon an individual is in a direct ratio to the muscular development of the frame, and the activity of the pursuits. Now, any one who has had opportunities, (and ours have been considerable), of seeing men of great muscular power, must have observed, that they are as often smooth as hairy, and that, on the contrary, men of weak frames and feeble constitutions, are frequently extremely hirsute. It is to be regretted that DR. HOLLAND confined his observations and his reasonings to man alone; had he extended his inquiries into the wide field of comparative anatomy, he would there have found facts which would have entirely disproved many of the conclusions at which he has arrived, and, we are disposed to hope, would have caused him to hesitate before publishing a work, principally remarkable for its fallacies and fanciful theories. The selection of a homœopathic bookseller, as his publisher, betrays a consciousness on the part of the author, that the work was most likely to find favour among the credulous partizans of a sect who, apparently from a morbid mental constitution, believe in dogmas to which healthy and moderately well-informed minds cannot assent. Crack-brained doctors, and unstable dreamers, who can attribute medicinal powers to an infinitesimal fraction of a grain of coffee, may adopt as truth Dr. Holland's *Discovery of the Use of the Hair*: but among sober men of science, his views can find no advocates. Had this little book not been the production of the author of a really instructive treatise on *Diseases of the Lungs from Mechanical Causes*, which was most favourably received by the profession, we would not have troubled our readers by recording as our opinion of the present performance, that it is quite unworthy of its author.

CRITICAL DIGEST OF THE BRITISH AND FOREIGN MEDICAL JOURNALS.

PRACTICE OF MEDICINE AND PATHOLOGY.

DR. W. T. GAIRDNER'S MEMOIR ON THE PATHOLOGICAL ANATOMY OF CHOLERA.

Dr. W. T. Gairdner, Pathologist to the Royal Infirmary of Edinburgh, has published, in the *Monthly Journal*, an interesting and valuable summary of the morbid appearances found in the bodies of persons dying, at Edinburgh, from Cholera. We fully recognize the importance of such observations: but it is obvious, that the pathology of an intensely toxæmic disease, like Cholera, in which rapid death so frequently follows the seizure, can only be learned by an examination of the blood itself, and of the evacuations. It is encouraging to observe, that although a too exclusive solidism still prevails, that exclusiveness is daily diminishing. However, until a greater number of well-trained and competent observers devote themselves to the chemical and microscopical investigation of the fluids, no truly great discoveries can be looked for in Pathology, and no signal improvement can be achieved in Rational Therapeutics.

In a modified sense, the following remarks of Professor Webb of Calcutta, are true, without any limitation as to disease or climate, but they are entirely applicable to Cholera. The older physicians, we must now admit, were not very far wrong, when they asserted that diseases generally originate in the blood, and that the effects on the nervous system, and the structural alterations in the solids, are in truth secondary affections. "In the majority", says Dr. Webb, "of the most fatal diseases of India, morbid anatomy, if restricted to the solids, would not explain anything adequately. If we take some of the most common, and most rapidly fatal diseases, and carefully investigate their nature through the medium of their morbid anatomy—take rapidly fatal fever, that destroys in twelve hours—take Cholera, that destroys in six or seven hours—take land or sea scurvy, in which, without pain or sickness, patients occasionally drop down dead; lastly, take *coup-de-soleil*—or take *delirium tremens*, most carefully scrutinizing the morbid appearances—nothing in the solids of the body presents itself which you can regard as essential to such diseases, yet they all strongly resemble each other in these two characteristic features—enormous congestion of blood, and the fluid condition or altered nature of the blood. Every other feature may vary in every one of them; but the alteration in the blood is invariably found." (Webb: *Pathologia Indica*, 2nd ed. p. 17.)

The summary given by Dr. Gairdner ought to have been accompanied by a report of some individual cases: those characterizing groups being given with every minute detail, and the rest in an abbreviated or tabular form. We hope that Dr. Gairdner will still publish the cases, and enable his fellow-labourers to analyse the various facts for themselves. Some of the conclusions arrived at by Dr. Gairdner might then be better understood: for example, we are at present in difficulty as to the remarks on congestion. Congestion is assuredly the essential character of a stage of Cholera: and no general statement as to the presence or absence of this condition is of any value, unless accompanied by an analysis of the cases, mentioning the duration of the disease when death occurred, the leading symptoms, and the treatment adopted. The account given of the condition of the kidneys is very interesting: but we would have liked, in supplement, a precise numerical statement, embracing the points of each case, as now suggested. In the first hour of a choleraic diarrhœa, the urine will be found albuminous: but were the patient to be then

suddenly cut off, nothing would be found in the kidneys beyond great congestion. How valueless, nay, how deceiving, would be an undigested summary of the morbid appearances found in the kidney after scarlatina! Unless, along with the anatomical appearances in each case, we had information as to the exact duration of the attack, also an account of its leading symptoms and treatment, we should have most unsatisfactory data upon which to found any conclusions. For example, if a patient be cut off at an early stage of scarlatina, even though there have been anasarca and albuminuria, we only find the kidneys congested; but in those who, after weeks or months, die dropsical, and who have had albuminous urine, these organs are invariably found in a more or less advanced stage of degeneration, from the deposition of morbid matter. Again, if a Cholera patient die at the end of a long typhoid stage, very probably an analogous if not similar condition will be found.

We throw out these remarks, in the hope that Dr. Gairdner will yet supply the whole of the valuable information which he possesses regarding the Pathology of Cholera. Rarely does it fall to the lot of an observer so thoroughly competent to have such ample scope for the study of this disease; and we feel assured, that the readers of the *Edinburgh Monthly Journal* would not grudge to one of its editors the necessary space for a series of articles on so important a subject. There are some important topics, to which the author does not even advert; and, as a very remarkable omission, we would mention that nothing is said as to the condition of the lungs. Our high sense of the value of the present memoir has suggested these remarks; and induced us to reprint it entire, with its accompanying foot-notes.

Dr. Gairdner's Memoir.—"The following statement is founded on the examination of eighty-nine fatal cases of Cholera, during the late epidemic, in the theatre of the Royal Infirmary of Edinburgh. In the course of my duties as pathologist to that institution, I have had unusual opportunities of contrasting and comparing the appearances in Cholera with those presented to my notice in connexion with other diseases; and the constant use of this *comparative* method of observation has led me to consider many statements as erroneous, which are generally—and in some cases all but universally—received in relation to this disease. The greatest care has been taken to verify or correct the results obtained by previous observers, more especially where any theory of the disease appeared to be involved; microscopical analysis and chemical tests have been applied wherever they promised to aid in the investigation; and in regard to such doubtful points as appeared likely to acquire precision by numerical analysis, the results have been preserved in the tabular form.

"The bodies opened were mostly from the Cholera hospital, being taken at random from those who died under the care of Dr. W. Robertson; a few, however, were from the infirmary. The proportion of females to males was two to one. The average age of the patients was thirty-three, by far the greater number being between twenty and forty. Four of the females were in different stages of pregnancy; but as the greater number of the bodies of females, known to be pregnant, were given to Mr. Goodsir by his special request, this number does not give an accurate idea of the large proportion of pregnant cases. Several of the females had been nursing, as was shown by the distended mammæ, which readily yielded milk on pressure. The great majority of the bodies examined were evidently those of persons previously healthy and vigorous. They presented the external appearances, so well known in Cholera, of lividity and collapse, the last being caused by the shrinking of the cellular tissue from the absorption of its watery parts; there was, however, no diminution of the fat, which was usually in very considerable quantity on the abdomen and elsewhere. The muscles were of good colour, and usually in strong tonic contraction from the *rigor mortis*. The

more important facts, resulting from the examination of the internal organs, are embodied in the following conclusions :—

"I. *Previous diseases of those attacked.* Cholera appears, during the late epidemic, to have attacked chiefly persons in health, or in the retrograde stages of chronic affections, and to have spared almost entirely those affected with acute or actively progressive disease. Appearances of acute disease were chiefly observed when death took place after more or less distinct reaction, and were evidently the *sequelæ* of the choleric affection. The chronic lesions were exactly similar in kind to those most commonly found in hospitals and dissecting-rooms, but bore a decidedly lower proportion than is usual to the whole number of cases examined. Thus the lungs had the traces of old disease in one-sixth of the cases; among which, two only (cases of miliary tubercle) indicated progressive disease. The liver presented a chronic lesion in one case; the kidneys in four, of which only two (incipient Bright's disease) were progressive. The uterus and ovaries were frequently more or less abnormal; but the only progressive lesion was ulceration of the cervix, usually quite superficial. The intestines were uniformly exempt from chronic disease. It thus appears that the opinion which has been so extensively prevalent since 1832, that Cholera attacks chiefly or exclusively individuals of unsound constitution, or bearing the traces of previous organic disease, is not borne out by the facts of morbid anatomy; and, in particular, that there is no evidence whatever that previous disease of the intestinal canal predisposes to Cholera.

"II. *The Blood* is much less affected in its physical characters than is usually supposed to be the case in Cholera. Its coagulation within the vessels takes place much as in other diseases. In the majority of instances, firm clots are found within the heart, more or less completely decolorized; and the serum or non-coagulated portion contains the greater part of the blood corpuscles. The colour of the blood presents nothing unusual, the epithets 'dark' and 'venous,' being in no degree more applicable to Cholera blood after death, than to that of every ordinary form of fatal disease. The remarkable viscidity of the serum (or portion of the blood not involved in the clot) so often noticed, was chiefly observed in cases fatal during the collapse or early reaction; and was certainly owing to the removal of the fluid matter by the intestines. The effect of this in modifying the chemical constitution of the blood has been fully shown in Dr. Robertson's researches (*Monthly Journal*, May, p. 764). The microscopic appearances of the blood presented nothing unusual.

"III. Much importance has been attached to *Congestion* in relation to the pathology of Cholera. But it is an error to conceive congestion as an essential or universal condition in this disease; for, although the lungs and right side of the heart are frequently loaded with blood to a considerable extent, the liver, spleen, and kidneys are, in most cases, paler than is usual in other affections. The intestines present every shade of colour, from the palest to the deepest. The uterus and Fallopian tubes are generally loaded with blood. The venous system of the brain, and indeed the great veins generally, are also in most instances full. But such appearances are very common in other forms of fatal disease.

"IV. A tendency to *Ecchymosis* in various situations was certainly characteristic of Cholera to an extent not common in other fatal diseases. These ecchymoses seldom occurred externally, except in one situation, viz., beneath the conjunctivæ of the eyes, which were very commonly more or less bloodshot. Among the internal organs, it was more frequent on the intestinal mucous membrane, especially of the colon, than in any other situation; but very frequent also in the form of petechiæ, on the posterior surface of the heart, and occasionally in other places, as the cellular tissue surrounding the cervical vessels, and in that around the dura mater of the spinal cord. Perhaps there were other situations in which ecchymoses might have been found on examination; but in the above it was so frequent, that in only six, out of twenty-six cases, was it not found in one or more of them.

"V. The *Glandular Secretions* in Cholera, are probably more or less diminished in quantity (although there are no very precise observations on this point); and they appear also, from the observations of Dr. D. Maclagan[1] on the milk, and of Dr. J. W. Begbie, and other observers, on the urine,[2] to undergo great alterations as to quality. But with the exception of the urinary secretion, which in the collapse appears to be nearly, if not altogether suspended, there is no evidence that any of the more important and constant glandular secretions are suppressed in any stage of this disease. The milk could be readily expressed in streams from the ducts, even after death, in nursing women. All the other glands preserved their natural appearance and structure, and the lymphatic and mesenteric glands contained a secretion, which presented the normal microscopic elements.

"Next to the suppression of urine, the suppression or retention of the bile has been assumed (on account of its apparent absence in the dejections) to be one of the most characteristic features of Asiatic Cholera. The assertion that the bile is suppressed, however, is obviously incorrect; and it is only wonderful that this idea has not met with more positive discouragement by pathological writers. In the late epidemic, in every instance, except two, the gall-bladder contained more or less bile, which was mostly of good colour or consistence; and, in the greater number of instances, in quantity sufficient to produce considerable distension. One of the exceptional cases was the one formerly referred to, of diseased liver, in which the gall-bladder contained only a thin light-coloured fluid; in the other, abundance of bile was present in the duodenum and stomach. The gall-ducts were most frequently empty, but occasionally contained bile; a probe passed in all cases easily from the duodenum to the gall-bladder, being usually somewhat tightly grasped at the neck of the latter, as is invariably the case, whatever be the cause of death.[3] The duodenum contained, in most cases of collapse, no appearance of bile; but there were, nevertheless, several cases in which the characteristic green colour was present in greater or less amount in the contents of the duodenum and stomach, though not in those of the intestines generally.

"It appears, therefore, clear, that the non-bilious character of the evacuations cannot be due to non-secretion. It must, therefore, be ascribed to retention of the secreted bile in the gall-bladder. But it may well be doubted whether this retention can be rightly regarded as any part of the pathological process in Cholera. The quantity of bile which passes into the duodenum, under ordinary circumstances, in the absence of the natural stimulus of food, is probably very small; and the quantity which appears in the fæces in the normal state, or even under an ordinary attack of diarrhœa, would be quite insufficient to tinge visibly the enormous quantity of fluid thrown off by the intestines in Cholera. Further, the examination of the Cholera dejections chemically shows, that biliary colouring matter can frequently be discovered in them by the nitric acid test, when it is not appreciable otherwise;[4] and it is fully proved by the *post-mortem* appearances,

[1] "See Dr. Robertson's account of the Practice in the Cholera Hospital, in the *Monthly Journal*, Dec. 1848, p. 394.

[2] "Dr. J. W. Begbie has made a very extended series of observations on the urine voided in the earlier periods of reaction, from which it appears that the urea is generally much diminished, and in some instances entirely absent; and that albumen is almost invariably present, in greater or less amount, together with epithelium, for a variable period after the commencement of reaction. The presence of albumen was noticed at a very early period in the Edinburgh epidemic, and has since been extensively observed in the Parisian hospitals. Dr. Begbie also informs me, that various other modifications of the urinary secretion have been observed by him; in particular, a reaction with nitric acid indicating the presence of bile.

[3] "This constriction at the neck of the gall-bladder is probably due to an elastic tissue. It has been frequently mistaken for *spasm* of the gall ducts; a condition which I believe, *as far as post mortem examinations are concerned*, to be purely imaginary.

[4] "Dr. Parkes seems to doubt whether the matter indicated by this reaction is bile; but

that bile is occasionally found in appreciable quantity in the duodenum during the collapse state (though to a more considerable extent during the reaction). From these circumstances it seems probable that the secretion of the liver is discharged into the intestines in Cholera, to quite as great an extent as in most diseases in which digestion is totally interrupted, or as in a healthy individual when fasting; and that its ceasing during the collapse to colour sensibly the dejections, is the consequence of its extreme diffusion through the mass of fluids in the intestines.

"Repeated microscopic examinations of the liver revealed nothing unusual. The kidneys, however, appeared in many cases to have undergone morbid changes, the cortical substance being pale and turgid, and the tubuli uriniferi gorged with imperfectly developed epithelium, which was mostly loaded to an unusual extent with oleo-albuminous granules. A similar state of the kidneys occurs after scarlatina, and not unfrequently after typhus fever, and some other acute diseases.[1]

"The secretions of the serous membranes appeared to be diminished in quantity, and everywhere more viscid than natural; an effect probably of the altered constitution of the blood.

"VI. *The condition of the Intestinal Canal and its Secretions* demands special notice. The most frequent of all the abnormal conditions of the mucous membrane was the prominence of the intestinal glands, both aggregated and solitary, but especially the latter. This condition, the *psorenterie* of some French writers, was found in about two-thirds of the cases. The great frequency of patches of ecchymosis in the intestines, especially in the cæcum, has been already alluded to; in these cases the intestinal contents were usually more or less tinged with blood, and presented blood-corpuscles, among their other elements, under the microscope. The ecchymosed patches were distinctly circumscribed, in tint varying from claret colour to the deepest purple, approaching black, but in parts not unfrequently greenish or ash-coloured; their surface presented a similar appearance, in all but colour, to the rest of the mucous membrane, and was not perceptibly elevated. In three instances, however, a different appearance was observed in the colon, the mucous membrane presenting a few flattened elevations, each over the extent of about a sixpenny piece, of a greyish or leaden colour. These elevated patches were evidently due to a sub-mucous exudation (probably identical with the diphtheritic exudations described as occurring in Cholera by Virchow), and yielded on section a creamy fluid; in this fluid, microscopic examination showed no well-marked pus-corpuscles or complete cells, but a number of nuclei, on which acetic acid produced no effect. In one protracted case, in which the great intestine was much ecchymosed, there were traces of dysenteric lymph on several parts of the mucous membrane. In two other instances, there was distinctly exudation of yellowish lymph, with heightened vascularity on the external serous surface of several folds of small intestine.

"On the other hand, it was by no means uncommon, especially in early fatal cases, to find the intestines throughout natural in colour and appear-

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neither does he admit it to be uric acid, the only substance which has been alleged to have caused confusion. The principal reason stated for his scepticism is, that 'that there is a remarkable retention of this product (bile) in Cholera, as in dysentery.' It will be at once obvious that this is the very preconception against which I am arguing. See the LONDON JOURNAL OF MEDICINE, Feb. 1849, p. 143.

[1] "I am indebted to my friend, Mr. Alexander Borthwick, now in Dumfries, who studied along with me very carefully the condition of the different organs in Cholera, as compared with the miscellaneous cases which came under our notice, for tabular statements which show, quite satisfactorily, the much greater comparative prevalence of an excessive quantity of oleo-albuminous exudation in the kidneys of Cholera patients, than either in the liver or the heart, which were in this respect below the average. None of these cases, however, with the exception of those alluded to in a former part of this communication, presented the granulations of Bright, or any other unequivocal marks of a chronic disorganization.

ance, or even paler than natural; and in many of these cases there was no prominence of the solitary glands.

"The intestinal contents resembled closely, at first sight, the well-known Cholera stools. In their most characteristic appearance they were yellowish-white, but frequently acquired, from blood on the one hand, or bile on the other, various shades of orange and greenish colour. On microscopic examination, the intestinal contents invariably showed immense quantities of perfect epithelium, sometimes in coherent masses, peeled from the mucous membrane, and preserving the form of the villi and follicles to which it had been attached. The existence of epithelium in the fluids found in the intestines in Cholera, has been noticed by Boehm (see *Medical Times*, June 24, 1848) and other observers, and has been supposed to indicate a complete desquamation of the intestinal epithelium as one of the special pathological conditions of Cholera. In reality, however, the appearance proves precisely the reverse; for the presence of epithelium, in such large quantities, in the fluids found in the intestines after death, is the result of purely mechanical maceration upon a mucous membrane to which, during life, the epithelium remained attached. That this is the case is proved by these facts: 1st. That artificial maceration produces a similar result on a healthy mucous membrane; 2nd. That the epithelium found in the fluids of each division of the intestines, is always that of the particular part where it is found; 3rd. That the true Cholera stools, *passed during life*, contain so little perfect epithelium, that it cannot be considered as anything more than an accidental ingredient.[1]

"The examination of the Cholera stools leads to much more important and less confusing results than that of the intestinal fluids after death. These discharges separate by filtration, or on standing, into a colourless, or slightly coloured fluid, of an alkaline reaction and a flaky sediment. The former is usually of a specific gravity, from 1005 to 1010, and contains, therefore, a very small proportion of solid matters; these have been shown by Dr. Parkes to consist chiefly of salts. Repeated examinations of this fluid have shown, during the late epidemic, (as Andral showed in the former,) that albumen, as tested by heat and nitric acid, is not necessarily present in it. Indeed, the presence of albumen usually coincided with that of a small quantity of blood, which, as before mentioned, is frequently present. The fluid, however, contains *constantly* a small quantity of an organic substance which is precipitated by alcohol, by corrosive sublimate, and (when acidulated) by ferrocyanate of potash; and which presents, in other respects, the chemical reactions of mucus.[2]

"The flakes which form the sediment of the Cholera stools, have likewise the ordinary chemical reactions and physical properties of mucus. They are, however, opaque and turbid, and when submitted to the microscope, show a hyaline finely-striated basis, involving numerous granules, nuclei, and cells. The granules and minuter molecules require no particular description. The nuclei are from 1-250th to 1-180th of a line in diameter, circular or slightly oval, and not affected by acetic acid. The cells are comparatively few in

[1] "A similar conclusion, in regard to the desquamation of epithelium, has been maintained by Dr. Parkes, in an elaborate article on the *Intestinal Discharges in Cholera*, in the London Journal of Medicine for February last. Although there are many opinions in Dr. Parkes' paper from which I differ, it affords me much gratification to observe, that the principal facts included in the description of the Cholera masses by himself and his colleagues, correspond so nearly with what I have myself observed."

[2] "M. Mialhe calls his substance *albuminose*, and considers it as "the ultimate product of the digestion of albuminous substances" (see *L'Union Médicale*, 6th April 1849). His pathology of Cholera is founded on the alleged presence of albuminose in the blood, which assertion, however, he does not appear to have attempted to establish by experiment. I prefer, therefore, the more familiar term of mucus, which is perfectly applicable to this substance, and was used by Andral, to one which is associated with a very doubtful hypothesis. The nearly allied chemical relations of mucus and the protein compounds are well known.

number, mostly globular, seldom exceeding 1-150th of a line in diameter. Some of them are but little affected by acetic acid, and single-nucleated; others present all the appearances of perfect pus cells, being two, three, or even four-nucleated, and having the cell-wall rendered very transparent by acetic acid. The most common appearances, however, were the nuclei without cells, above mentioned.

"Any one who is familiar with the pathological phenomena displayed by mucous membrane, in a state of irritation, will readily recognize the similarity of the above microscopical appearances to those of ordinary catarrhal discharges from any of the mucous surfaces of the body; the chief peculiarities of the choleric fluid being the enormous exaggeration of the watery and saline matters evacuated, and likewise the smaller tendency to the discharge of albumen, and the development of pus-corpuscles, which are so readily formed and thrown off from a mucous membrane in a state of ordinary irritation.

"The effects upon the blood of the removal of the watery and saline constituents, are well shown in Dr. Robertson's analyses; and it is probable, that a considerable amount of the albumen of the blood also passes away by the intestines, in the form of mucus, which is nearly allied to it in composition, and which, as has been shown, forms the organic basis of the choleric evacuations.

"VII. The *Nervous System* presented no lesion worthy of remark. The pia-mater of the brain and spinal cord were often considerably injected, especially that of the cord, which, from the position of the body after death, almost always presents this appearance. The spine was, however, only opened in four cases; and in one of these, there were found small calcareous plates upon the arachnoid of the cord—the most frequent, probably, of all its chronic lesions. The sympathetic ganglia and the pneumo-gastric nerves were repeatedly examined; but nothing unusual, except, in a few cases, slight ecchymosis, was discovered." [*Edinburgh Monthly Journal* for July 1849.]

RAIKEM ON THE PATHOLOGICAL ANATOMY OF CHOLERA.

M. Raikem has communicated to the Belgian Academy of Medicine the following Anatomo-pathological researches on Cholera. His observations were made on persons who had died before reaction had commenced; this it is important to bear in mind, as the pathological changes of that period are different from those which occur in the stage of reaction. In the former, there are none of the characters of inflammation; in the latter, they are often present.

I. External State of the Body. In general, the animal heat continues longer than usual; but in no case has it appeared to rise immediately after death to a higher degree than during the agony. I have never seen spontaneous movements in the dead bodies of Cholera patients, either in the limbs or lips; but a hospital pupil and several patients have told me that they witnessed such phenomena in two cases. The face was pale, sharp, and exhibited muscular contractions, so that the angles of the mouth were elevated, and the mouth was partially opened; this was observed more on one side than on the other. At the moment of death, all the limbs became stiff. This stiffness lasted some days, even when putrefaction had commenced in the anterior walls of the abdomen, and the splanchnic cavities had been opened more than forty-eight hours. It was accompanied by hardness and very distinct muscular markings, by extension of the foot, and by a very powerful contraction of the fingers on the thumb, which returned immediately after they had been, with great difficulty, extended. In most cases, the nails and fingers were in a state of cyanosis. This livid tint had its seat in the subjacent vascular tissue; and—which is a remarkable circumstance—pressure on these parts produced paleness, succeeded by a return of the colour when it was removed, just as is observed in Cholera patients during life. This experiment serves to show that the black blood with which the cutaneous capillaries are engorged, is still in a liquid state, so as to be capable of being easily dis-

placed. The disappearance of the cyanosis, from many parts, immediately after death, seems to prove the same thing.

II. Head. The arteries on the surface of the encephalon usually contained a little black thick blood, easily seen through their semi-transparent coats. The venous sinuses, especially the lateral, as well as the veins beneath the arachnoid, often contained some black, viscous, semi-coagulated blood. I once observed bubbles of air in one of the venous ramifications, in a patient who had died on the fifth or sixth day of the disease. There was, as yet, no evidence of decomposition, and the animal heat remained, although more than thirty hours had elapsed since death. Slight compression on the walls of the right ventricle of the heart, caused the escape from some divisions of the jugular veins, which had been opened, of bubbles of air, and frothy blood, in large quantity. Bubbles of air have been sometimes observed to escape, with the blood, from the vein of a Cholera patient, opened during life; and several physicians, worthy of credit, among whom is Professor Spring, have often found an aëriform fluid in the cerebral veins of individuals who had died of Cholera. The cerebral substance presented no constant alteration; I always found, however, the choroid plexus, the velum interpositum, and the veins of Galen, gorged with blood. The upper part of the spinal cord appeared, in most cases, more firm than usual.

III. Thorax. I have always found the walls of the right ventricle of the heart in an extraordinary state of flaccidity and relaxation, while the left ventricle was more or less contracted. The right auricle was very full of dark blood, frequently clotted; the right ventricle contained much less. The left cavities contained only a very little blackish thick blood, more liquid than in the right side. It may hence be presumed, that the functions of the heart ceased with the diastole of the right, and the systole of the left ventricle.[1] The venæ cavæ, the azygos, intercostal, and mesenteric veins, etc., usually contained more or less dark thick blood; but the latter veins were frequently flabby and weakened, containing less blood than their calibre would hold, and presenting no appreciable change of their walls. I have pretty often found in the arteries a little dark blood, especially in the aorta and carotids. The interior of these has several times appeared of a rosy tint, while the internal coat was softened and capable of being easily raised, bringing to view a number of small whitish striæ, formed by atheromatous matter, in the subjacent cellular tissue. The lungs were generally more or less collapsed, leaving an interval of two or three inches between their anterior surface and the costal pleura. Their anterior surface was uneven; their substance felt like marrow, and crepitated but little. They were light, and almost exsanguine in the greatest part of their extent, except in their posterior and inferior part, which was the seat of slight sanguineous engorgement, and presented a more or less deep red colour. These viscera were often also emphysematous, retaining the impression of the finger. They were of a much lower specific gravity than water, and had no mucus nor froth in the bronchial tubes, and only contained an appreciable quantity of blackish blood in the vessels of the posterior and inferior portions. I have never met with tubercles in the lungs of Cholera patients; however, in one case there was tuberculous matter in the bronchial glands, and in the submucous cellular tissue of the ileum. Nor have these viscera ever presented traces of inflammation. However, in a young woman who died on the fifth day, and who presented on the fourth some symptoms of pleurisy, followed by hæmoptysis, I met with a sort of splenization of the inferior lobe of the right lung. This lesion was to be referred, I think, to hæmorrhagic congestion, with sanguineous effusion into the pulmonary vesicles, the minute bronchia, and the cellular tissue of the organ.

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[1] In a report read to the Académie de Médecine of Paris, in December 1831, it is stated, that the heart, in the bodies of Cholera patients, never presents the same persistence of contraction as the muscles of the limbs.

IV. Abdomen. The liver was slightly gorged with dark thick blood, but presented no remarkable alteration. The gall bladder was usually distended with bile of variable colour and consistence. I have several times found biliary calculi. Another time, its walls were opaque, whitish, thick, studded with highly-developed hyperæmiated vascular ramifications, and contained a large quantity of a clear limpid fluid, holding mucosity in suspension. Analogous observations have been made by a celebrated French physician, in Cholera patients. The portal vein contained little or no dark blood; its walls were collapsed, and presented no apparent alteration. The spleen, in no case, appeared to me softened and gorged with blood. It was not uncommon to find the mucous membrane of the stomach presenting, here and there, hyperæmiated and well-developed villosities, a more or less distinct dotting, or an arborescent injection with softening in various stages. In one case, that of a tanner who suddenly fell ill on the 27th of March, and died in twenty hours, I observed a circumscribed portion of the mucous membrane of the large end, to be of a greyish colour, very much softened, without any trace of organization, detached from the surrounding tissues, and exhaling a repulsive odour;—an alteration which I considered as a slough. The stomach, but especially the intestines, almost always contained a whitish creamy matter, less thick in the small than in the large intestines, and containing small grumous particles of the same colour. In three cases, these were replaced by whitish flocks, formed of very distinct *débris* or *detritus* of disorganized fibres; this happened in cases where a more or less extensive portion of the mucous and muscular coats of the intestinal tube had been destroyed or mortified, in consequence of a non-inflammatory pultaceous softening. The liquid was occasionally sanguinolent, or tinged yellow with bile, which seldom appeared in any great quantity in the duodenum and other small intestines. I have often met with lumbrici, but only once with a tricocephalus in the cæcum, a small entozoon which may be found in most subjects, of whatever disease they die. The internal surface of the intestinal canal was coated with a layer of thick glutinous mucus, or with a white creamy matter. Most frequently, it presented a more or less intense diffused redness, and a more or less marked arborescent injection. In these cases, I easily succeeded in producing paleness, by passing my finger several times over the hyperæmiated portions. This confirms the experiments of M. Magendie on the permeability of these vessels in Cholera patients, and shows the absence of inflammation. The mucous membrane of the intestines was sometimes pale, colourless, and thin, and exhibited vascular scattered ramifications through the sub-mucous cellular tissue. It was frequently covered, especially in the lower part of the ileum, with round whitish corpuscles, about the size of a hemp or millet seed, or even smaller. These corpuscles, more or less numerous, had a certain degree of hardness, and were raised above the level of the mucous membrane, rendering it rough to the touch. I have never met with them in the stomach; but it was not rare to find them scattered over the whole surface of the intestines, even on the spaces occupied by the glands of Peyer. The base of these corpuscles was of a pearly white, and surrounded by a sort of areola of hyperæmiated arborescent vessels. I rarely found them flattened, and with a distinct aperture in the centre; some of them appeared deprived of epithelium, and superficially ulcerated at their summit. When they were separated from the intestines, and punctured with a lancet, I was able to press from them a milky liquid, analogous to that found in the intestines. As these corpuscles are found indiscriminately in all parts of the intestines, it seems that they cannot be attributed to a morbid hypertrophy either of the glands of Brunner, which are peculiar to the duodenum, or of the glands of Peyer, which are found only in a certain part of the small intestines, but to an histological element common to different points of the intestinal canal. From the characters which they present, I suspect that their seat is in the closed capsules, or soli-

tary follicles without an aperture, which are found scattered throughout the intestines. The villi of the small intestines were commonly more developed than usual, and of a whitish colour. I have twice found the ileum without traces of inflammation, covered with ulcerations of more or less depth, with ragged edges, resting on the muscular coat, and in some places on the peritonæum, with softening of the surrounding mucous membrane. This had, in a more or less considerable extent, been in some way destroyed or liquefied, so that there only remained the peritonæal coat, covered by some remains of the superjacent tissues. The intestinal walls, then, viewed through day-light, resembled thin gauze, being semi-transparent, and very easily torn. In another case, that of an armourer, aged 26 years, subject to epilepsy, who had been ill only a few hours, the cæcum and a part of the colon were found attacked with a similar morbid erosion of the mucous, cellular, and muscular coats, without any appearance of hyperæmia or inflammation, even in the peritonæal membrane. I have sometimes met, here and there, with circumscribed ecchymoses and a sort of sanguineous infiltration, in the fatty vesicles situated between the layers of the epiploon and mesentery. The mesenteric glands were commonly a little swollen, firm, of a rose-colour; and, when cut into, allowed some serous liquid to exude. I have never met with intestinal invaginations in Cholera patients; the colon has, however, occasionally presented permanent contractions. Each time that I have made a careful examination of the superior cervical and semilunar ganglia, by placing thin slices of them on plates of glass, I have recognized with the naked eye, and still better with a powerful lens or with a microscope, a more or less marked arborescent vascular hyperæmia, often accompanied by small, sometimes by considerable ecchymoses, in their substance. The bladder was commonly empty, contracted, and lined with a whitish creamy matter; in one or two cases I was able to obtain some urine.

Remarks. Death, in Cholera, has been attributed to paralysis of the brain—*apoplexy*; to paralysis of the lungs—*asphyxia*; to paralysis of the heart—*syncope*. I am not disposed to admit the existence of paralysis of the solar plexus. Paralysis of the principal foci of life may occur either suddenly or gradually. Whatever may be the cause of death in the concatenation and succession of phenomena which precede it, I think with some others, that there is a moment when it commences either in the heart, in the lungs, or in the brain. But which of these organs is it that first loses life, or functional activity, in Cholera patients? It is not probable that the action of the brain ceases before that of the lungs and heart. In fact, the patient preserves his intellectual, moral, and affective faculties entire, up to the last moment; and the cerebral functions are least deranged in the course of the disease. It is generally admitted that Cholera patients die of asphyxia. But when I reflect on the anatomical characters of asphyxia—voluminous, distended, inflated lung, heavier than usual, of a dark violet colour in its whole extent, gorged with dark fluid blood, and having the bronchia filled with a frothy liquid, etc., while in Cholera patients it is collapsed, light, more or less exsanguine, with no froth in the bronchia, etc.,—I am authorized in saying that anatomo-pathological facts do not support the idea of asphyxia in Cholera. Such an idea is also opposed by the non-persistence of the contractility of the fibres of the heart, as well as by the phenomena presented by the circulation in the course of the disease, which tend to shew that the central organ of the circulation is primitively affected with inertia and want of power. I would then adhere to the opinion of those who consider that death begins from the heart. When syncope terminates various diseases, said the immortal Bichat, we constantly observe the lungs almost entirely empty; they are not gorged with blood. If no organic disease have pre-existed, they are collapsed, occupying only a part of the thoracic cavity; and retain their proper colour. [*Gazette Médicale de Paris*, 7th July 1849.]

SUPPRESSION OF URINE.

The toxæmic effects of partial or total Suppression of Urine, have been recently brought before our readers in Dr. Cormack's communications, p. 451-462, 522-537, and also in a paper by Dr. Oke, abridged from the *Provincial Journal*, at p. 580. More recently, Dr. J. C. Hall has treated of the subject in three papers, in the *Lancet* of June 2nd, June 16th, and July 7th. The following is the substance of his interesting papers: —

Case 1. March 18th, 1840. I was requested to visit Joseph L., rather below the middle height, stout, very "thick-set," with short neck, and florid complexion. He complained of heavy dull pain at the pit of the stomach; his bowels were disordered, as he supposed, from eating, the evening before, a quantity of new bread; he had been drinking for some days a larger quantity of strong ale than usual. The tongue was moist, and coated; urine high-coloured (but not less than usual), no headach; has of late been exposed a good deal to cold and rain. I ordered an ounce of castor oil, with m. xx. of tincture of opium, in a little warm gin-and-water. He came to me in the evening, saying he was no better; the bowels had only acted once, slightly; "does not think the pain and uneasiness quite so severe as in the morning." I ordered, extract of colocynth, eight grains; chloride of mercury, two grains. To be made into two pills, and taken directly.

19th. I saw him at *nine* A.M.; his face was flushed; tongue coated; pulse 100. He had felt better until this morning. At seven o'clock, feeling uneasy, he got up to make water, and could only pass a few drops; had not made water for the last eighteen or twenty hours. On the introduction of the catheter, not a drop of urine came away. On examining him more closely, he said the pain in his back was at times severe, succeeded by a dull, heavy, continued uneasy sensation, not amounting to actual pain—to use his own words, "the small of my back is half broken." He was generally out of sorts, the eyes heavy, pupils considerably dilated, and sluggish. When questioned, he said he "was not without pain in his head;" he "was drowsy, and would go and get some sleep, for bed was the best place for him." The skin was dry and hot. Bled to sixteen ounces. Blood dark and tarry; has had a motion which exhibits a deficiency of bile. To drink freely of linseed tea, as he complains of thirst; to have a warm bath, and to put mustard poultices to his feet. To take—calomel, eight grains; powdered cantharides, a grain; croton oil, four drops; extract of hyoscyamus, four grains: mix for four pills, one to be taken every three hours. Sesquicarbonate of soda, a drachm; nitrate of potass, a drachm; spirit of juniper, two drachms; tincture of squill, a drachm; tincture of cantharides, a drachm; camphor mixture, five ounces and a half: two table-spoonsfuls to be taken every four hours. Oil of turpentine, half an ounce; compound tincture of camphor, half an ounce; soap liniment, half an ounce: mix for an embrocation. This was well rubbed over the loins every hour. *Three o'clock*. Has been purged twice; has not passed any urine; complains of pain in the head, and a dull, heavy sensation in the loins; pupils dilated. Apply a large blister to the loins. *Six* P.M.; pupils more dilated; has wandered a good deal at times; lies in a half unconscious state, and when roused, answers in a quick, sharp manner. *Eight o'clock*: no better; pupils much dilated. When asked how he feels, says "he does not know, but thinks he is not bad enough for me to come so often." *Twelve o'clock*: much the same; has had two more evacuations; no urine has passed, nor is there any in his bladder.

20th. *Ten* A.M. Has passed a bad night; face flushed: pupils dilated; complains of thirst; pulse 90. Two ounces of urine were drawn off by the catheter; this is all he has passed for forty-two hours. Ordered, James's powder, four grains; chloride of mercury, two grains; mix for a powder, to be taken immediately. Spirit of juniper, two drachms; sulphate of magnesia, an

ounce; wine of colchicum seeds, two drachms; peppermint water, eight ounces: mix. Two tablespoonfuls every four hours. Bitartrate of potass, an ounce; lemon juice, an ounce; refined sugar, an ounce; essential oil of lemon, ten drops; boiling water, two pints: mix for an ordinary drink, when thirst is urgent. *Evening, Nine o'clock.* Has passed about three ounces of urine (high coloured and strongly acid) since morning; less pain in the head; bowels freely opened; skin moist. Potassio-tartrate of antimony, a grain; sulphate of magnesia, an ounce; tincture of cantharides, a drachm; syrup of tolu, three drachms; water, five ounces and a half: mix. Two tablespoonfuls to be taken every two hours.

21st. Decidedly better; less pain in the head; no pain in the loins; still feels a little stupid; pupils dilated; pulse 86. The bowels have been freely evacuated during the night; has passed, since yesterday, ten ounces of urine.

22nd. Feels no better; urine less in quantity than yesterday, and high coloured. To continue the mixture with the antimony, and to drink freely of the solution of cream of tartar, to which a small quantity of gin was added.

23rd. Still better; no pain in loins; urine gradually increasing in quantity; the pain in the head has nearly left him. Has taken to-day, for the first time, solid food (a bit of toast), since he was attacked. He gradually recovered; and is now (1849) quite well.

Case II. Mr. W. H., aged forty, a farmer, of rather full habit, but very temperate, consulted Mr. R. Cooke, of Gainsborough, having walked a distance of five miles to see him. He complained of being "generally unwell," but could not say exactly what was the matter with him; his bowels were confined; had not passed any urine on the previous day, or during the night. The pulse was slow and full. The catheter drew off two teaspoonsfuls of urine. Twenty ounces of blood were taken. Calomel, saline aperients, diuretics, and a stimulating embrocation to the loins.

May 5th. Bowels freely opened; pulse the same as yesterday; has passed a small quantity of urine.

7th. Better in every respect.

He gradually recovered under the judicious treatment of Mr. Cooke, but never appeared to secrete a natural quantity of urine until he had remained some time at Buxton, making frequent use of warm baths. He never had any pain in his loins; in truth, so little did he and his friends think of his malady, that they quite laughed at the fears expressed by his very experienced surgeon. I look on this case, however, as we shall see presently, as one of partial non-secretion of urine only.

Case III. In 1837, Mrs. D., of Newland-street, Kensington, was attacked with pain in the hip and loins, quick pulse, and scanty high-coloured urine. She gradually became worse. Six months afterwards, *October* 1*st*, 1837, I again saw her; the urine was now fœtid, of a dark colour, often containing long strings of blood. She complained of great pain in the loins; she got rest neither night nor day. These symptoms continued until five or six days before her death; her headach then increased; the urine ceased to be secreted; none passed, and none was detected in the bladder on the introduction of the catheter. She now became comatose, in which state she remained two days: and died on the 14th of October.

Autopsy. Twelve hours after death, I assisted Mr. R. I. Pollock, of Kensington, in making a post-mortem examination of the body. Both kidneys, especially the right, were altogether disorganized.

Case IV. Mrs. C. I saw this case with Dr. Peacock, of Gainsborough. After she had laboured for six months under symptoms of Bright's disease of the kidney, the urine ceased to be secreted, and she became comatose, and died in two days afterwards.

Case V. Is the well-known one recorded by the late Sir H. Halford, and which we quoted at p. 580. Sir Henry Halford at once said, that if the kidneys could not be made to act, the patient would soon become comatose,

and would probably die in the following night; and so it proved; the kidneys could not be made to perform their proper office, and in thirty hours, he died in a state of stupefaction.

Case VI. Dr. Elliotson. A man had taken, by mistake, a quantity of corrosive sublimate; "proper means had been used, and no harm was thought likely to occur; but after a certain time the urine became suppressed. I think the individual had hemiplegia; but I recollect perfectly that he became drowsy, and the drowsiness increased, till at length he became decidedly apoplectic, and died. One might have imagined, in such a case, that the urine would have been re-secreted into the ventricles of the brain; or that if no urine were secreted, that an excessive quantity of urea would have been found within the brain. Nothing of the kind, however, was discovered in this case. There was not only no urine in the head, but no excess of fluid either in or upon the brain. That was a result for which we were not prepared."[1]

Suppression of Urine is not very uncommon in poisoning with bichloride of mercury. We know, that in very large doses it acts as a caustic poison, from its affinity for albumen, fibrin, and other constituents of the tissues. Dr. Christison admits of two varieties of poisoning by it, in one of which, the sole or leading symptoms are, violent irritation of the alimentary canal. He says, "the pain soon extends from the stomach over the whole abdomen, which becomes acutely sensible to the slightest impression; violent purging, often of blood; inexpressible anxiety; flushed countenance; restlessness; pulse quick, small, and contracted; cold sweats, convulsive movements of the muscles of the face and extremities; sometimes diminished sensibility of one of the limbs, or of the whole body, or even paraplegia—*urine frequently suppressed.*" Two cases of poisoning by the external application of corrosive sublimate (in one of which the post-mortem appearances are given), are related by Mr. Ward. A youth, aged nineteen, rubbed in one ounce. There was constant vomiting, with *complete Suppression of Urine*, and frequent bloody stools. On the fifth day he died. The stomach was found much inflamed, and partially ulcerated; the small intestines were also greatly inflamed, and the lower portion of the colon and rectum were in a state of mortification. The *bladder was contracted and without urine.* Cases of poisoning by the bichloride of mercury, in which there appears to have been complete Suppression of Urine, confirm what Dr. Watson[2] has stated with regard to peritonitis. Dr. Abercromby says, "*Inflammation of that part of the peritonæum which lies in the immediate vicinity of the kidneys, may cause Suppression of Urine.*"

General Remarks. The case of J. L. (Case 1) suggests many considerations of practical importance; and I believe this to be the only case that has been published, in which recovery has taken place after so long a total suppression of this fluid;[3] for the difference between a *total suppression of urine, and the secretion of the smallest possible quantity*, is very great: in the one, there is a reasonable prospect of recovery; in the other, the kidneys must be made to act, or death will inevitably take place. Dr. Mason Good designates this disease *paruria inops;* Dr. Elliotson, in his lectures, speaks of it under the title of *ischuria;* and Dr. Willis has well described it by the name of *anuria*, or *anuria apyretica.* There is so little of pain, discomfort, or uneasiness, felt by the patient, that some hours frequently elapse before the patient becomes aware that he has been attacked with a serious disorder; and in a disease like this, which runs its course to a fatal termination in a few hours,

[1] Principles and Practice of Medicine, by J. Elliotson, M.D., p. 119.

[2] Principles and Practice of Physic, third edition, vol. ii, p. 357.

[3] Vide Dr. W. S. Oke's paper, London Journal of Medicine, p. 580. Dr. J. C. Hall indicates his scepticism in a foot note, but assigns no reasons.

how important is it that its earliest approach should be made known! Dr. Bright states, that in granular degeneration of the kidneys, "total suppression of urine but seldom occurs."

Suppression of urine depends on a variety of causes, and may be either *entire* or *partial*. Three kinds are mentioned by Dr. Prout: 1, *Inflammatory;* 2, *Spasmodic;* 3, *Mechanical*. A singular case of suppression of urine, from a mechanical cause, is related in a letter from Sir B. C. Brodie, now before me. He says: "I had a patient with an enlarged prostate, which prevented him emptying the bladder. For some time he had not secreted more than half a pint daily; but the secretion was immediately trebled on the catheter being used two or three times daily."

Many years ago, I opened the body of a gentleman who had suppression of urine for some few days before death, and *died comatose*. There was a large abscess, which had passed backwards from the kidney, and burst into the loins; and we found a calculus of oxalate of lime, of the size of a walnut, occupying the whole of the pelvis of the kidney, and extending into the infundibulum. The other kidney was increased in size; and had, no doubt, for some time, performed double its usual duty.

In suppression of urine, from whatever cause arising, if no urine be separated from the blood, death, ushered in by coma, quickly takes place. Death is said to result from urea being detained in the system. If the kidneys, from whatever cause, cease to secrete urine, urea accumulates in the blood, is carried with it to every part of the body, and acts as a poison, but more especially upon the brain. There are certain exceptions to the general rule, that suppression speedily proves fatal. Cholera patients will sometimes remain days without secreting a drop of urine, and yet recover. In such cases, I have no doubt that the urea is drained from the blood by the continued and enormous evacuations from the stomach and bowels.[1]

We have on record some truly singular stories of persons remaining for days—and even for weeks—without secreting a drop of urine, and who yet have continued in a good state of health. Some of these narratives are evidently altogether unworthy of credit; others are sufficiently well authenticated to demand at our hands a careful examination.

The two most common emunctories which supply the place of the kidneys, appear to be the bowels and the skin. We have had an example of the effect of large evacuations from the stomach and bowels in cases of malignant cholera; for, with total suppression of urine, there is no coma. In the case of Dr. Parr there was no vicarious evacuation, except a profuse sweat for a day or two. In this case there could not have been any imposture; the patient was in a hospital, and constantly watched. No mention is made of the state of the evacuations from the bowels. In Dr. Richardson's patient, there was an habitual diarrhœa. M. Andral infers that the blood contains, in variable proportions, the elements of all the secretions; that, under ordinary circumstances, these elements are separated from the circulation only by those organs whose special structure is adapted to bring about such separation; but that, under particular states, these elements may be separated from the circulation by other channels than those regularly intended for the purpose,—not, indeed, in the condition of perfect secretions, but in a more simple form, containing, however, the essential elements of these secretions. The conclusion to which the majority of the most celebrated chemists have arrived, is, that the urea excreted by the kidneys, is derived, for the most part, from the transformation or decay of the textures of the body; most of their carbonaceous matter being extracted by the affinity of the oxygen of the blood, and carried off by the lungs in the form of carbonic acid gas. The

[1] Urea is sparingly, if at all, found in the choleraic paroxysm. This vital metamorphosis does not seem to go on till reaction commence. It is difficult to find a trace of urea in cholera stools. Editor London Journal of Medicine.

effect of the non-secretion of urine on the system, has been proved also by the experiments of Dumas and Prevost on animals in which they had extirpated the kidneys. On the third day after the operation, the poor creatures were seized with vomiting, and a profuse diarrhœa of a brown liquid, which, Dr. Day informs us, the recent researches of Bernard and Barreswil have proved to contain a considerable quantity of ammoniacal salt, resulting from this elimination of urea from their surface. Fever, with heat, varying sometimes as high as 110°, and sometimes as low as 92°, accompanied this purging; pulse very small and frequent; respiration oppressed. Death took place from the fifth to the ninth day. The post-mortem appearances were, effusion of serum on the brain, copious mucus in the bronchi, and bilious fluid and fæces in the intestines. The urinary bladder was much contracted, and the liver appeared inflamed. The blood was more watery than natural, and was found to contain urea. From five ounces of blood taken from a dog, twenty grains of urea were obtained; and two ounces of blood, taken, under similar circumstances, from a cat, yielded ten grains.

In *injuries of the spine in the vicinity of the kidneys*, or *tubercular disease of the chord*, we have always more or less retention of urine, with considerable febrile excitement: and very frequently a marked diminution of the quantity secreted. In some patients, the urine first secreted, although acid and free from mucus, has a very offensive smell. In other cases, it deposits a yellow amorphous sediment. The most common change is a peculiar ammoniacal odour, and the deposition of a large quantity of adhesive mucus, the urine being alkaline. After some time, phosphate of lime, secreted by the inner coat of the bladder, becomes blended with the mucus, which is also streaked with blood. This state of things may arise three or four days after the accident, or they may not be noticed for a week. In one case I remember, they did not make their appearance until nine or ten days after the accident. I am not aware that they occur after injury to any particular portion of the spine; in fatal cases, they remain to the last; in others, which recover, they sometimes go on for three or four weeks. Another peculiarity, to which my attention was directed by Sir B. C. Brodie, consists in the variation which takes place in the state of the urine: to-day it is alkaline, depositing adhesive matters; to-morrow it is clear and acid; and the day after, perhaps, it is again alkaline. Suppose a man falls from a ladder and injures his spine: very little disturbance following, the accident may be altogether disregarded. What is too often the result? In a day or two the patient is attacked with paraplegia; then we may have gangrene of the nates, and retention of urine; in a week, or perhaps longer, the secretion of urine becomes day by day diminished, and is, in the end, altogether suppressed; then we have coma, speedily succeeded by death. I mention these cases to direct attention to the very great importance of making a careful examination of cases of this kind. Dr. Williams thinks it very probable, that severe mechanical injuries or shocks operate by weakening the vital powers, by which the blood is perpetually purged from its own impure products. That this is, in part at least, their mode of action, appears clear, from their effect in suppressing or impairing the natural excretions; and, in such cases, urea has now and then been detected in the blood.

Treatment. 1st. *Cases of partial suppression of urine.* Such cases are very far from uncommon. A gentleman exposes himself to a cold atmosphere: for example, remains loitering about in his garden, on a cold April day; in the evening he complains of having "taken cold", and creeps to the fire; he has an attack of shivering; he retires to bed; his skin becomes hot and dry; the urine is small in quantity, and of a dark colour. This attack often continues for some days; after which, under appropriate treatment, the urine gradually becomes secreted in larger quantities, and the patient recovers his usual health, the improvement commencing with the increased se-

cretion of urine. This I have observed so often, that no doubt remains on my mind as to its correctness; and its bearing on the treatment of disease is highly important.

Dr. Golding Bird shows that the kidneys remove from the blood all excess of water, together with the metamorphosed products of effete tissues, or malassimilated food; that these organs are, in reality, the "depurators" of the system, and the teachers of the numberless chemical changes which are constantly taking place both in the healthy and diseased animal fabrics. He has come to the conclusion, that from 600 to 700 grains of solid materials are daily separated by the kidneys of a person in a state of health. He has also constructed a very important table, by which, in a moment, the relation between the specific gravity of the urine, and the amount of solids contained in an ounce of it, may be ascertained. Dr. Golding Bird also draws attention to the fact, so well known to all whose eyes have wandered over the Hippocratic writings, that there is "an obvious relation between the termination of some phases of disease and a crisis by urine." He has been enabled, by the powers of modern science, to prove that what was said by the old physicians, with regard to a crisis by the urine, is founded in fact. He gives the results of several cases of intermittent fever, which were under his care in Guy's Hospital, and remarks: "If I can prove that, concomitantly with an enormous increase in the excretions of the kidneys, sudden improvement occurs in a patient,—which change for the better does not take place until this great change is observed,—I think it will be conceded that I shall produce sufficient evidence to show that the observations of our predecessors were correct, and that something like a critical excretion from the kidneys does take place, —at least in the diseases which have been sufficiently carefully studied in this point of view."—Lect. iii.

2nd. *Cases in which there is a total suppression of urine.* It remains only to say, in conclusion, a word or two on the treatment of those singular cases to which Sir H. Halford first of all directed our attention,—in which, independent of acute disease—independent of any derangement he could discover in the structure of these organs—their secreting office was completely suspended. This constitutes the disease which Dr. Willis has named "anuria", said by him to terminate in coma in four or five days, and in death in a few days more. I venture to say that a fatal result, according to my experience, occurs much more quickly. In three out of the five fatal cases which came under the observation of Sir H. Halford, a very strong urinous smell was observed in the perspiration for twenty-four hours before death. The patients all died with "symptoms of oppression on the brain".

Looking at those cases of cholera which have recovered, in which suppression of urine has continued some time, I am inclined (and the benefit was evident in the case of J. L.) to advise, at the first, that a full dose of calomel and colocynth, with a drop of croton oil, should be made into a pill and given to the patient; this to be followed by an aperient draught of infusion of senna, sulphate of magnesia, and cream of tartar. A large stimulating glyster should also be exhibited, so that the bowels may be largely purged three or four times; cupping over the loins; bleeding, if the state of the pulse admit of it; warm baths; a large blister to the loins; and full doses of powdered cantharides,—a remedy which was very successful in the hands of Sir A. Cooper, and which, in one case of total deprivation of urine, in which I was consulted, was most certainly followed by a re-secretion of urine, after all hope of success had been abandoned, and the recovery of the patient regarded as all but impossible.

Treatment, by powerful diuretics, may theoretically appear incorrect; but, so far as we know at present, it is one that has been found, practically, the most successful. [Abridged from *Lancet*.]

The subject treated of by Dr. John Charles Hall, in the papers of

which we have given an abridgment, is replete with interest: too often do practitioners overlook in their treatment the scanty secretion of urine—and we would particularly call attention to what the author says regarding cases in which there is only partial suppression.

The phenomena of partial and complete suppression of urine involve some of the most interesting inquiries connected with the great subject of toxæmia; and while they lead us to appreciate the extreme value of the modern researches of Drs. Bence Jones, Golding Bird, Garrod, Parkes, and others, they induce us to peruse with increased respect the dust-covered volumes of the ancient fathers of medicine. While we would deprecate a return to exclusive humoralism, we hope to see the study of the blood continue to engage the attention of physicians as much as, and even more than at present. From the chemical examination of the blood, and the chemical and microscopical scrutiny of diseased growths, and of the excretions in health and disease, brilliant therapeutic discoveries must arise; nay, are already appearing in some of the practical improvements resulting from the labours of the above-named, and other physicians.

It is well to remember, that in the treatment of any suppressed excretion, especially when the suppression is complete, we must—even before we attempt to restore the function—at once, and with the utmost urgency, strive, by some decisive measure, to avert impending, and too often inevitable death, from blood-poisoning. Minutes may be valuable. By the skilful use of means—perhaps by the lancet, an emetic, or a hydragogue cathartic—we may gain sufficient time, and pave the way for the use of other remedies which also require to be directed against the prime cause of the symptoms. In a case of acute hepatitis, we have seen coma and convulsions suddenly supervene: the patient was, when hope had almost fled, rescued from the clutch of death by rapidly inducing purging. A profuse sweat, a violent fit of vomiting, or of diarrhœa, are often Nature's methods of getting rid of a morbid poison, of arresting toxæmic phenomena, and of thus commencing a cure. From these facts, physicians have derived useful lessons. Dr. John C. Hall draws a fair induction from the excessive purging in cholera, when he attributes to it the absence of coma; though it must be remembered, that *cholera stools do not contain urea*. We now know, that during the choleraic paroxysm, urea is very sparingly formed in the blood, if formed at all: it is not till reaction sets in, that this vital metamorphosis recommences: then, but not till then, have we an excess of urea in the blood, then also we have the sign of this, viz., albumen in the urine. The "albuminose" of cholera stools, when the bio-chemical changes are re-established, becomes metamorphosed, within the blood, into the normal excrements of that fluid. The researches of Drs. Parkes, Garrod, and others, seem to justify such conclusions.

We cannot allow the unexplained recommendation of a stimulating diuretic, such as cantharides, to pass unnoticed. We believe that the circumstances never occur, in which this medicine ought to be given in complete suppression: and even when the affection is partial, we would only advise it in the anæmic and atonic: in such patients, when combined with iron, we have seen benefit result from its use. In them, the secretion is defective from want of blood, and nervous energy; but in nine cases out of ten, of total or partial suppression, there is no anæmia, and the patients are suffering from congested kidney, with or without granular or other degeneration.

DR. J. F. BEHREND'S MEMOIR ON DROPSY AFTER SCARLATINA.

Dr. F. J. Behrend, of Erlangen, has published very valuable Observations on Dropsy after Scarlatina in the *Journal für Kinderkrankheiten* for March and April 1849, of which we subjoin a pretty full abstract. He describes—1. Dropsy dependent of congestion and inflammation of the kidneys (*Hydrops nephriticus*); and, 2. Dropsy dependent on debility or impoverished state of the blood (*Hydrops anæmicus*).

I. Dropsy from Congestion and Inflammation of the Kidneys. The Dropsy may appear as early as the fifth or sixth day after the appearance of the eruption, or as late as the fifth or sixth week. The form of Dropsy under consideration is preceded by certain premonitory symptoms, which should excite suspicion. Sometimes desquamation has scarcely commenced, when the redness of the skin has entirely disappeared. The child appears to have recovered; but a carefully observing medical attendant finds, from the somewhat accelerated pulse, the failing or, at least, irregular appetite, and the disturbed, though prolonged sleep, that the patient still has some of the *materies morbi* remaining in him. The child is peevish; the skin is cold and pale; the pulse becomes quicker; and œdema soon appears. Sometimes it is ushered in more violently: as in a case where the child was seized, on the tenth day after the appearance of the eruption, with intense fever, and was delirious throughout the night. On the next day, œdema appeared, which increased as the fever decreased. In most cases the œdema appears slowly and gradually, first on the face, then on the hands and feet. The attack is almost always accompanied by loss of appetite, great thirst, constipation, and retention of urine, at the same time that there may be urgent desire to pass it. The extent of the œdema is very various in different cases, and varies even in the same case. Sometimes it is confined to the eyelids, frontal region, and cheeks; sometimes it extends over the whole body, and has occasionally ascites conjoined with it, or even, in a few cases, Dropsy of the pericardium. In many cases the œdema alternately increases and diminishes.

Case i. A little girl, seven years old, was attacked, on the fourteenth day after the attack of scarlet fever, with œdema of the face and hands, soon extending over the whole body. On the third day, after appropriate treatment, there was only a slight swelling of the wrists and knuckles. But, on the next day, the œdema was found to be again extending over the legs, organs of generation, and lower parts of the abdomen. No cause for this could easily be assigned, except that on that night there had been a sudden change of temperature, which appeared to have had a considerable influence on the temperature of the interior of the house.

The symptoms which accompany the Dropsy are not always in relation with the extent of the œdema. They are frequently modified by the existence of effusion into the serous cavities. It is evident, that the symptoms will be different, and of greater intensity, when the general Dropsy is complicated with Dropsy of the pericardium. Another group of symptoms will be produced by the supervention of ascites or hydrothorax. These complications, which are not unfrequent, influence not only the phenomena of the disease, but also its result. If there be no effusion in the serous cavities, the phenomena are usually simple and mild. A slight fever continues for two or three days; after which there is a copious flow of urine, and the œdema rapidly disappears. Sometimes the œdema, when it is very extensive, continues from five to eight days, attended with pain in the back and loins, and may even last to the tenth or eleventh day, before the kidneys have regained their function, and the Dropsy begins to subside. The worst cases are those in which there is effusion into the serous cavities. There is also another complication, which Dr. Behrend has observed in two cases—œdema of the lungs.

Case ii. The patient was a girl, aged nine years. The eruption was vivid, and continued for three days; the desquamation commenced on the morning of the fourth or fifth day. At 3 P.M. of this day I again saw the child, and found it lying quiet and without any complaint. As it had been previously restless, I was surprised at the contrast, and feared that some untoward symptoms might supervene. I therefore again visited the child at 9 P.M., and found fever—that is to say, a small, unusually quick pulse, but nothing else remarkable. On the morning of the next day, I learnt that the patient had passed a very restless night, had slept little or none, had desired to drink much and frequently, and had often had a desire to pass urine, but had only passed it in small quantity, and of a very dark colour. On examining the

child, I now perceived considerable œdema, extending over the whole face. This continued, in spite of the remedies employed, till the next day, when it began to disappear, and was almost entirely removed on about the tenth day. The child, however, had a feverish attack every evening; the appetite was not regained; but there was constant thirst, although not so violent as before. The bowels were moderately open, but the amount of urine passed was still scanty, and not at all in proportion to the quantity of drink which was taken. On testing the urine, a pretty considerable quantity of albumen was found in it; and a microscopic examination showed a multitude of fragments of epithelium, with blood-corpuscles and pus-globules. On the fourteenth day, there was a sudden increase of the fever: the child complained of pain in the back and loins, and was very restless. She slept but little, and talked in her sleep; she lay with her eyes half open, ground her teeth, and often rose up. On the morning of the fifteenth day, there was considerable œdema, extending over the whole of the lower limbs, and the hands and face. Proper remedies were immediately employed, but without much success. On the seventeenth day, the Dropsy was general, and considerable; the countenance could scarcely be recognized, from œdematous swelling, and a certain expression of internal pain; the walls of the abdomen were much infiltrated, and it was difficult to discern whether ascites existed. The urine was scanty, dark-coloured, highly albuminous, and, on standing, deposited a muco-purulent reddish sediment. The child complained only of pain in the back, and severe pain in the loins. It could not remain long in the horizontal position, being threatened with suffocation; it gasped for breath, and a short, dry, hoarse cough immediately came on. It had to be quickly raised, and well supported by pillows. The remedies which were employed to restore the function of the kidneys were of no avail; the breathing became shorter, and more difficult, the universal infiltration more intense, and the child died, making violent attempts at breathing, on the twenty-first day of the illness. The autopsy showed, besides a granular condition of the kidneys, considerable œdema of both lungs, but especially of the right.

Case III. In this case, that of a boy seven years old, the symptoms and result were very similar to the last. The first traces of œdema were evident on the fifteenth day from the appearance of the eruption; there was no variation in the Dropsy, as in the last case, but, in spite of all remedies, it gradually increased, till it became universal. Impeded respiration supervened; the breath was drawn constantly, and with great pain; it then became more difficult and short—and at last ceased. A post-mortem examination was not permitted; but the existence of œdema of the lungs was placed beyond a doubt, by the auscultatory signs which existed during life.

Effusions into the serous cavities after Scarlet Fever, occur, according to my observations, in the following order of frequency:—1. *Ascites.* 2. *Hydrops Pericardii.* 3. *Hydrothorax.* 4. *Hydrocephalus.* Pulmonary and cerebral œdema are, in some measure, consequences of the impediment to the circulation, resulting from the general œdema; the former do not occur without the latter. It is to be remarked, that there seems to be a certain inverse ratio between the effusions into serous cavities, and those into the subcutaneous cellular tissue. The more extensive the œdema, the less the effusion into the serous cavities, and *vice versâ*. Ascites, however, seems to be an exception. Sometimes this antagonism is very remarkable.

Case IV. Elise H., aged seven years, a lively healthy child, a brunette, not of a scrofulous constitution, had Scarlatina; during which she was watched with the greatest care. Towards the third week after the appearance of the eruption, while apparently going on favourably, she was seized with a sharp pain in the right side, between the third and fifth ribs,—in short, with all the symptoms of pleurisy. A few leeches were applied, and followed by a blister, removed from place to place, every six hours, so as only to produce redness of the skin. No other medicines than demulcents were given inter-

nally. Up to the third day, the pain in the chest continued to increase, and leeches were again applied. Symptoms of oppression, and attacks of dyspnœa, and a dry teazing cough supervened; these distressing symptoms had increased on the next day. There was little doubt that the pleurisy was complicated with watery effusion. A colleague, whom I had called in consultation, considered that benefit might be obtained by stimulating the kidneys; we therefore ordered digitalis, with acetate of potash; and weak infusion of elder flowers as a drink. Towards the evening, when the child had scarcely taken a spoonful of the medicine, there occurred so violent an attack of orthopnœa, with palpitation, that an immediate fatal result was apprehended. This continued till late at night, when the child fell into a sound sleep, in which it continued till morning. I was then surprised to find it lying quiet, without any difficulty of breathing; but the face, feet, and hands, shewed extensive œdema. This quickly increased; and in two days had become general. It was accompanied by constipation, and scanty and albuminous urine. The breathing was free, and the pulse small and rather slow. Acetate of potash was administered in larger doses, while the digitalis was somewhat diminished. Infusion of senna, with tartrate of soda, was also given. On the fifth day, from the commencement of the œdema, there was copious diuresis, and the œdema seemed rapidly disappearing. The urine contained still a considerable quantity of albumen. In a few days, the Dropsy had almost entirely disappeared; and the parts which had been affected with it; viz., the arms, legs, and abdomen, were wrapped in flannel. This improvement, however, was of no long duration. On the evening of the same day on which we had begun to give tonics, the child was seized with a dry cough, and with sharp pain in both sides of the chest. These increased during the night; and in the morning, the distress, oppression, and difficulty of breathing, were as severe as ever. Leeches and blisters were employed; but the distressing symptoms continued to increase from hour to hour. Orthopnœa, palpitation, and slight œdema of the face set in, and the child died on the next day. At the autopsy, both pleural cavities, especially the right, were found filled with a large quantity of serum. The lungs were apparently healthy. There was no effusion into the pericardium; the heart was healthy. The kidneys were hard and firm, and internally were in a state of granular degeneration. There was then in this case, first, pleurisy with effusion, probably only on the right side; this gave place to general anasarca; and as this disappeared, effusion into both pleuræ occurred, and caused death.

The question as to the relation of albuminuria to the dropsical effusions, bears on the existence of Bright's disease. It is now correctly doubted by many, whether the granular change in the kidney, which has long been considered as the cause, or the proper origin of albuminuria, be really the commencement of Bright's disease. The granular condition is rather to be looked on as a sequel, or rather as a consequence of the same congestion which produces the albuminuria.

The urine, in cases of Dropsy after Scarlatina, is scanty; at first clear, then darker; becomes turbid on standing, and deposits a whitish sediment. It has an acid reaction, is usually of low specific gravity, and deposits masses in the form of flocks on the application of heat. When the Dropsy is more extensive, the urine becomes of a dark dirty brown colour, with a reddish brown sediment: heat throws down a large quantity of albumen. Under the microscope, the sediment presents crystals of urate of ammonia, blood-corpuscles, pus-globules and mucus-globules, and epithelium particles. The kidneys present very little change in the slighter cases, where there has been little œdema, and when the patient has died of affection of the brain, or some other accidental complication. They are only firm, and full; and on section, the cortical substance is seen to be very red, and apparently in a state of intense capillary congestion. But in those cases in which the Dropsy has been of greater extent and duration, and where death has been produced by, or has

soon followed it, the kidneys exhibit that change, which Dr. Bright has so acutely and accurately described in the disease which bears his name. The capsule can be torn off more easily than is natural, and the surface is pale and spotted. On section, the cortical substance is distinguished in a most remarkable manner, by its pale clear straw colour, from the extremely dark-coloured tubular substance. The contrast is sharp and distinct; the tubular substance is highly injected; so, also, are even the pelvis and infundibula. Under the microscope, the granular condition of the cortical substance, which can be felt with the finger on the surface of the section, is found to be produced by a blocking up, or obliteration, of the tubuli and interspaces with pus-globules, and mucus-globules; and by these exudation corpuscles, the capillary vessels are in part compressed, in part entirely obliterated. The latest researches of G. Johnson, Busk, Toynbee, and Simon (*Med. Chir. Trans.*, vol. xxix and xxx), have shewn, that this alone explains the apparent anæmic state, or the clear pale yellow colour, of the cortical substance.

In explaining the general phenomena of the Dropsy, it is to be remembered, that the skin and kidneys are vicarious in their function. The nature of the scarlatinal poison we are not acquainted with; we cannot isolate it by physical or chemical means. We know, however, that it exists; and farther, that its tendency is chiefly to the skin, and next to the kidneys. It is generally considered a highly favourable circumstance if the eruption be well developed in cases of scarlatina; the danger is not indeed removed, but considerably diminished. Whether the desquamation be necessary to the elimination of the poison, is not discovered. It appears not to be so; and the treatment adopted by Scheeman, in Hanover, and confirmed by Mauthner, of rubbing with fat, so that desquamation is prevented, appears to indicate that it is not necessary. It appears, then, that desquamation is to be considered as a sequel of the inflammation of the skin. If desquamation be prolonged, the excreting function of the skin must be impaired, and the kidneys then assume increased activity: hence, the scarlatinal poison is determined for elimination as much to the kidneys, as to the skin. The intensity of this determination evidently depends on the intensity of the scarlatinal poison existing within the body, which seems to vary greatly in different epidemics, and in different individuals. The greater the poisoning is, the greater and longer will be the process of elimination in favourable cases. A very lively cutaneous eruption and a certain degree of determination to the kidneys may be sufficient; but one of the following events may happen: 1. The attempt at elimination by the kidneys may be in greater proportion than that by the skin; 2. The elimination of the scarlatinal poison may not end at once, but may cause a fresh irritation, which will not produce efflorescence, but, as the skin has been impaired in its functions, will lead to watery exudation into the subcutaneous cellular tissue. Elimination by the kidneys can never tend to so favourable a result as that by the skin; for, in the former organs, congestion is produced, and, as a consequence of this, diminished excretion. The vessels of the cortical substance become obstructed; the tubular substance throws off a part of the exudation in the form of albumen; while another part is deposited in the form of granulations, compressing and obliterating the vessels. The impediment, greater or less, to the excretion of urine, must lead to effusions into the serous cavities or cellular tissue. I am inclined to think that the Dropsy is partly a direct result of the impediment to the eliminative process of the skin, and of the efforts of Nature to restore this, and partly a consequence of the impediment to the excretion of urine by the kidneys. To the latter cause, the effusions into the serous cavities seem referable; while the Dropsy of the cellular tissue seems to be a sequel of the renewed attempt at elimination by the skin.

There must be some co-operating agency—a specific cause—which may directly lead to accumulation in the kidneys and to albuminous exudation. For were it otherwise, there would always be congestion and exudation of

albumen in cases where there is increased tendency to the kidneys, in consequence of impeded cutaneous function. This specific matter can only be the scarlatinal poison, which endeavours to get eliminated by the kidneys, as well as by the skin. We may, therefore, place the eliminative function of the skin, as manifested by eruption and œdema, on the same line with congestion of the kidneys. I am convinced that the prevention of the excretion of urea from the blood is the chief cause of the dropsical effusions. Albuminuria is, indeed, a dangerous symptom; but it is no evidence of the intractability of the disease, or of imminent death. Recovery is certainly tedious; but there is not such a predominant disposition to disorganization of the kidneys, as in the so-called Bright's disease of old drunkards. The more violent the affection of the kidneys is, the greater is the danger, as death may occur from sudden effusions into the serous cavities. In cases where the patients have died of Dropsy of the pericardium, or of hydrothorax, or of hydrocephalus, after scarlatina, the kidneys are found highly congested, especially in the tubular substance. Dropsy of the cellular texture seems to diminish the danger of effusion into the serous cavities; but death may be caused by œdema of the lungs.

Treatment. Dr. Behrend here observes, that the first thing to be done is to diminish the congestion of the kidneys, so as to prevent the exudation of plastic matter, and to restore the diuresis. For this purpose, the best means are repeated applications of a sufficient number of leeches—from six to ten—to the lumbar regions, or repeated cuppings: the former seem the best remedy. The second indication is to restrict the diet, and to administer mild diuretic salts, as the acetates of potash and soda, which act also on the intestinal canal. Infusion of elder-flowers is useful as a drink, for promoting diuresis. The body should be kept warm by being wrapped in flannel, impregnated with the vapour of sugar: this is prepared by throwing pounded white sugar on glowing coals, and holding the flannel over it. The limbs may also be enveloped in raw wool. I have lately tried the effect of sponging the skin with turpentine, and then covering it with flannel; but cannot speak with certainty as to the efficacy of this treatment. If the dark colour of the urine return after it has been removed by means of local depletion, this must be repeated, without any regard to the apparent weakness of the child. This state of the urine is indicative of a highly congested state of the kidneys. If the attack be less acute—if there be œdema, and the urine be albuminous, but clear and in sufficient quantity, spirits of nitric æther may be used, in addition to the diuretic salts. A restricted diet is not so necessary, as that the child should be kept in bed and in a warm atmosphere, so that the skin may be kept in a state of functional activity. Friction with oil of turpentine, warm baths, and mild purgatives, are indicated: sanguineous depletion is not proper. The child must be kept very warm for a long time: it should be daily rubbed with flannel for a month; and if it continue pale and weakly, iron should be administered; and the patient should have the benefit of country air. In Dropsy of the pericardium and pleura, and in hydrocephalus, there is so great danger, that these affections will have to be treated without reference to the original cause of the disease. There is but little hope of recovery, unless Nature takes some extraordinary course.

II. Dropsy from Debility or Anæmia *(Hydrops anæmicus)*. This is the result of debility or anæmia, and resembles the Dropsy which arises from that cause, when scarlatina has not occurred. When a weakly, delicate, anæmic child is seized with scarlatina during an epidemic, the eruption is generally slight and very transient. On the third or fourth day, or later, œdema of the joints sets in. The pulse is usually small and somewhat accelerated, but the fever is very inconsiderable or entirely absent, the tongue and lips are pale, and the countenance somewhat sunken. The urine is pale; and contains no albumen, or so little, as not to be noticed. Drs. Philip of Berlin, and Kennedy of Dublin, have recorded cases of this kind. This form of

Dropsy depends less on congestion of the kidneys, than on the deficiency of fibrin in the blood; which, when there is an effort to eliminate the scarlatinal poison by the skin and kidneys, cannot effect this process, but gives rise to a watery exudation. The diagnosis is easy, if the urine be examined. The absence or small quantity of albumen, and the non-existence of blood or of exudation-corpuscles, give full information. The urine has not generally an acid reaction: it often contains an abundance of phosphates. The treatment should consist of the tartrate, carbonate, or hydrochlorate of iron, which may be combined with bitters.

Conclusions. 1. Two forms of Dropsy occur after Scarlet Fever, the *nephritic* and the *anæmic*. 2. These distinctions only point out the original evil, which is the cause of the Dropsy. 3. In *hydrops nephriticus*, the main affection is a highly congested state of the kidneys, even proceeding to inflammation. 4. This congestion of the kidneys is just as much a specific effect of the scarlatinal poison, as the cutaneous congestion and eruption. 5. As a consequence of the congestion, there is exudation into the kidneys; and, from rupture of capillary vessels, some effusion of blood, which tinges the urine of a dark chocolate-colour. 6. The presence of albumen in the urine is partly the result of exudation, partly of the mixture of blood. 7. The small vessels and tubuli of the kidney are partly compressed, partly obliterated, by the exudation, so as to give a granular appearance: the capillary vessels of the cortical substance are partly empty, partly filled with exudation-corpuscles, without red blood, which produces the pale yellow colour of this substance. 8. The tubular substance undertakes the whole function of the kidney. A more powerful flow of blood and urine to this part produces within the tubes a removal and reproduction of epithelium (analogous to the eruption and desquamation in the skin), and finally a discharge of albumen with the urine. 9. The impediment to the function of the cortical substance of the kidneys—the modification to such an extent of the function of the tubuli—prevents the full elimination of urea from the blood. 10. Being retained in the blood, the urea mixes with it; and, in conjunction with the scarlatinal poison, produces nervous symptoms of a narcotic character: delirium, coma, sopor, etc. 11. To this mixture of urea with the blood, as well as to the endeavour to eliminate the scarlatinal poison by the skin, is the watery effusion to be ascribed: the effusion into the serous cavities is entirely a result of the presence of urea in the blood. 12. The danger attending the Dropsy depends on its situation, and on the amount of organic activity which is present. 13. Effusions into the serous cavities are especially dangerous, while cutaneous Dropsy is of less moment; and, of the effusions into serous cavities, that into the peritoneal cavity is less dangerous than those into the cerebral and pericardial cavities. 14. The greater the activity of the organism, the less is the danger; for this shows that the blood has not retained any considerable amount of urea. 15. So long as the urine gives evidence of the presence of blood, with epithelium, besides albumen, and has an acid reaction, the danger is less than when it is clear, phosphatic, and at the same time highly albuminous, as this indicates an extensive and progressive degree of poisoning of the blood. 16. The indications of treatment, in cases where the urine contains blood and albumen, and is acid, are to diminish the congestion of the kidneys, and to promote the full elimination of urea. An antiphlogistic and saline treatment is here indicated. 17. As soon as the urine, while it contains albumen, becomes of a pale yellow colour, and ceases to have an acid reaction, the antiphlogistic and saline treatment is improper. It is then necessary to counteract the poisoning of the blood, and to increase its plasticity. Iron and tonic medicines are here indicated. 18. The same treatment is necessary, when a weakly, anæmic child has been seized with Dropsy soon after a slight attack of scarlatina. The urine here contains little or no albumen; and the plasticity of the blood is so low, that death will result, if it be not increased by the diligent use of tonics.

SUGAR FOUND IN THE BLOOD, TISSUE OF THE KIDNEY, ETC., BUT NOT IN THE SPLEEN AND PANCREAS, OF A DIABETIC PATIENT, WHO DIED SUDDENLY.

M. Bernard lately examined the body of a diabetic patient, under the care of M. Rayer, who died suddenly on the third day after admission into hospital. The urine, drawn off while the patient was yet warm, contained a large quantity of sugar. The liver, mis-shapen, and much larger than in the natural state, contained also a large proportion. The kidneys were also enlarged; the left kidney weighed 245 grammes (nearly 8 ounces), and the right, 235 grammes (7½ ounces). On washing the tissue of the kidneys, sugar was obtained, but in a much smaller quantity than from the liver. The pancreas and spleen were diminished in size, and contained none: nor was there any in the nervous centres. The blood contained large quantities of sugar, from whatever part it was taken. M. Bernard, in calling to mind a case, in which the serum of the blood, left to itself, became acid by the decomposition of sugar, remarks that this bears on a circumstance in the present autopsy. Sugar was found in the serosity which filled the pericardium; but this same alkaline serosity, when removed from the pericardium, became acid in consequence of the decomposition of the sugar. The intestinal and gastric juices, which seem remarkably fitted for the decomposition of sugar, contained none. M. Bernard has met with sugar in the semen of a goat, which had been artificially rendered diabetic. It is interesting to know that, in cases where the tissues and fluids of a diabetic patient can be examined after sudden death, sugar may be found in the blood, liver, and kidneys. The difference in the reaction of the fluids, hitherto referred to the cause which produces the diabetes, are seen to be dependent merely on the decomposition of the sugar. [*Gazette des Hôpitaux*, 10th July, 1849.]

CAMELINE—A NEW PROPHYLACTIC AGAINST SMALL-POX.

Dr. Agnielli, Director of the Committee of Vaccination at Algiers, has found a new virus, which, like the vaccine, is protective against small-pox. He proposes to call it "Cameline", since, according to the statement of the Arabs, it is the product of an accidental eruption on the female of the camel: it resembles that of the cow. We should rather imagine it to be *the same* virus transmitted through a different animal, and not a resemblance only; and, if there be anything accidental about it, it is the camel, and not the eruption which is so. However, Dr. Agnielli intends travelling with a caravan, in order to verify his conjectures. [*Medical Times*, July 21.]

HOOPING-COUGH CURED (?) BY COFFEE.

Various medicines have from time to time been brought forward as specifics in Hooping-Cough; and some of them we have tried. To quinine, salicine, arsenic, and oxide of silver, we have given a fair trial in a considerable number of cases: and the result of this experience is, our belief that all of them, except the last named, possess some power in checking the disease, when it has gone on for some time, and is marked by periodicity. When the hour of the recurrence of the fits comes to be accurately foretold, all of the above-named drugs given in full doses in anticipation of the attack, postpone, or entirely prevent it. In the early stages, or later, where there is some amount of bronchitis, the free use of stimulating embrocations, with occasional expectorants, and stomachics, and alteratives (such as a powder composed of cusparia, trisnitrate of bismuth, and rhubarb), are the means we trust to. When the cough assumes a distinctly periodic character, we recommend a trial of antiperiodic remedies and change of air, both of which measures, in many cases, prove of signal and speedy benefit.

From Pereira's summary of the therapeutic uses of coffee, it is not unlikely, however, to exercise some control in hooping-cough. "It has," says Pereira, "been employed as a febrifuge in intermittents; as a stomachic in some forms of dyspepsia; as an astringent in diarrhœa; and as a stimulant to the cerebro-spinal system in some nervous disorders." Floyer, Dr. Percival, and others, have used it in spasmodic asthma; and Laennec says, "I have seen several cases in which coffee was really useful." *Pereira*, vol. ii, ed. 1842, p. 1441.

The recommendation of coffee, in Hooping-Cough, seems decidedly to merit attention. Dr. Jules Guyot,[1] who advocates the use of the remedy, writes thus, in the *Union Médicale* for 24th April, 1849:—"*Café à l'eau*, hot, and well sugared, in suitable doses, taken four times, or oftener, daily, will cure, in from two to four days, the most obstinate cases. For a child of two years, the dose is a teaspoonful; for a child of four years, a dessert spoonful; and for an elder patient, a tablespoonful. To obtain a rapid and permanent cure, it is necessary to conjoin with the coffee treatment, a diet of fried and roast meat, taking care to mince it, if the child cannot masticate it sufficiently. The quantity of milk used, ought to be diminished: and farinaceous food, confectionaries, and fruits, must be entirely prohibited."

The alleged specific power of coffee in hooping-cough, was accidentally discovered by observing the following case:

A child, of four years old, under rigid dietetic treatment for measles, was seized with congestion of the lungs, against which energetic antiphlogistic treatment was put in force. When Dr. Guyot was called in, death seemed imminent from violent paroxysms of cough, which induced such alarming suffocation and syncope, as to cause the patient to appear to be actually dead. Some spoonfuls of strong beef-tea, with some spoonfuls of sweet and hot infusion of the lime-tree, were prescribed. The child passed the night without fainting. On the following day, the same infusions were continued, and in addition, there was given a little bit of grilled and finely minced mutton, with the view of restoring strength as rapidly as possible: but a severe fit of coughing came on, which terminating in vomiting, caused ejection of the food: recourse was again had to the beef-tea, which provoked a similar fit of coughing, and was ejected. In these circumstances, with death apparently impending, a tea-spoonful of coffee was given after each tea-spoonful of beef-tea. Not only was the beef-tea retained: but, to my great surprise, the cough likewise ceased. Two hours afterwards, the child took with relish a little bit of hashed cutlet, followed by a tea-spoonful of the coffee: the food was not ejected, digestion went on naturally, the night was passed in comfortable sleep, there was no more cough:—and in truth, the child was saved. On the following day, the treatment was continued, and there was a continuance of a like satisfactory state. On the third day, however, the relations omitted the coffee, when the cough returned, after the first meal, with all the characteristic violence of well-formed hooping-cough: and this state continued during the day. On the fourth day, when the coffee was resumed, the cough disappeared. During forty-seven days the coffee was persisted in, when the cure was distinctly complete. The little patient was the only daughter of M. Haquin, a master bootmaker of Argenteuil.

This case was furnishing subject of serious reflection, when Dr. Guyot met in a public conveyance M. Bouju, ex-notary of Franconville: he told him that he had been obliged to have double doors for his study, to keep out the terrible and incessant noise caused by his two children with hooping-cough. Dr. Guyot detailed the case above narrated: and he cured both his children in four days by means of coffee. He has since tried the remedy successfully in above sixty cases. The efficacy of coffee in hooping-cough seems to show that the seat of the disease is not in the bronchial tubes or larynx—nor in their

[1] Not M. Guizot, as stated in some Journals.

vascular or nervous network—but exclusively in the digestive organs, and especially in the pharynx and stomach. The cough and convulsive movements of the larynx are excited by a pruriginous irritation of the pharynx; which, again, probably depends on some special affection of the stomach."

SURGERY.

RETENTION OF URINE IN THE BLADDER RELIEVED WITHOUT CATHETERISM —A METHOD OF TREATMENT PROPOSED BY MR. J. J. CAZENAVE OF PARIS.

In the *Union Médicale* for 19th July 1849, Mr. J. J. Cazenave adverts to the great difficulty which is frequently encountered in relieving, by means of the catheter, persons suffering from retention of urine in the bladder, and describes a method of treatment, which he performed and found more available than the instrumental. During the last eleven months he has been called to eleven cases of this description: *three* were from chronic inflammation of the prostate gland, and the other *eight* were dependent on strictures. Of the latter class, three had been subjected to long and unavailing trials with the catheter: and five had not been interfered with in any way. The treatment to be described completely failed in the three prostatic cases: it likewise failed in two of those in whom the catheter had been used before Mr. J. J. C. was called in: but in the six remaining cases—cases of complete retention of urine—it was entirely successful. These are the facts upon which the recommendation of the treatment is based, which is thus described by the author: "When called to a patient labouring under complete or incomplete retention of urine, I immediately cause the large bowel to be emptied by means of an oily clyster: or I may prescribe a purgative one, if there have been no motion for fifteen or eighteen hours. When the first clyster has been returned, I make use of another, less in bulk, and of cold water. Absolute rest in bed is enjoined: and compresses soaked in cold water, or (what is better) bladders filled with roughly-pounded ice, are placed around the penis, upon the perinæum, thighs, anus, and hypogastrium. If the patient do not pass more or less water after half an hour of this treatment, I have him laid on the edge of the bed with a waterproof cloth under him, and then subject him, for twenty or twenty-five minutes, to a cold ascending douche, in a small continuous stream. At the end of this time, I give another cold lavement, and introduce into the rectum small, smooth fragments of ice. The application of refrigerants to the parts above specified is, at the same time, continued. In an hour, I have generally been rewarded by success." The author speaks with disappointment of his trials with chloroformization as an aid to catheterism: for our own part, we are inclined to think that in many cases it may be useful. However, the refrigerant method of Mr. J. J. C., we also think, is very likely to be available in a certain number of cases.

EXCISION OF THE HEAD OF THE FEMUR: CONFLICTING OPINIONS.

In our Number for February, p. 195, we noticed a diversity of opinion among eminent surgeons, as to the propriety of excising the head of the thigh-bone. Much ink has, since that date, been shed, by many writers, for and against the operation: but the question, nevertheless, remains very much where we left it; and we cannot now more accurately express our present opinion, than by quoting the words formerly employed:—"It is true, that there are great difficulties connected with the selection of cases; but it is equally true, from the results obtained by Mr. Fergusson and others, that it may, in certain instances of Hip-disease, be undertaken with great propriety; that life may be saved, and a limb, more or less useful, preserved." By the controversy which has arisen, it has been very clearly shown, that the number of cases in which this operation is a proper one, are extremely few in

number, and the recognition of them is beset with doubts and difficulties: yet we cannot concur in the *absolute* veto which Mr. Syme desires to place on the operation. The words in which he characterizes it in his latest essay are as follows,—"a proceeding which I believe to be, without exception, wholly unnecessary, utterly useless, and dangerous in the extreme." The opinions of Mr. Fergusson and Mr. H. Smith, as latterly enunciated, are so guarded, that it seems remarkable that so keen a controversy should have arisen. The practical difference is, after all, not very great. Mr. Fergusson, in his admirable clinical lecture (*Lancet*, 7th April 1849, p. 359) says,—"I advocate the practice as applicable to certain cases only, and these cases seem to me so few in number, that years may be passed in active practice, ere such an instance may come under the surgeon's notice; but when such are met with, I conceive that the principles on which we treat caries, where there seems no disposition to a spontaneous cure, are as eligibly applicable here as in all other parts of the body, where we are in the habit of cutting away carious bone."

The following is a list of the more important recent papers on the subject. All of them will repay perusal.

1. Fergusson, Wm., Esq., Clinical Lecture, in which the subject is discussed in all its bearings. *Lancet*, 7th April, 1849; also in *Medical Times* of same date.
2. Syme, James, Esq., Notes from a Clinical Lecture on Morbus Coxarius, *Medical Times*, 30th December, 1848, p. 199. Essay on Morbus Coxarius—terse and practical—in *Lancet* of 10th March, 1849. Definition of Caries, *Lancet*, 5th May 1849, p. 489. Remarks on Objections to the Definition, *Lancet*, 9th June, 1849, p. 625.
3. Smith, Henry, Esq., On Excision of the head of the Femur, *Lancet*, vol. i, 1840, pp. 361 and 413. Vol. ii, pp. 579 and 636. Strictures on Mr. Syme's opinions, *Lancet*, 6th January, 1849, p. 21; also, 17th March, p. 299. On Mr. B. Norman's opinions; also, May 5, p. 490, June 2nd, p. 597; on Mr. Syme's Definition of Caries, 12th May, p. 516. On the Surgical and Personal Points of the Discussion, *Medical Times*, 16th June, 1849, p. 647.
4. Norman, H. Burford, Esq. Morbus Coxarius and Excision of the Head of the Femur, *Lancet*, 8th July, 1848, and 28th April, 1849, p. 447.
5. Walton, H. H., Esq. Excision of Head of Femur, *Medical Times*, 31st March, 1849, p. 433.

NITRATE OF SILVER IN QUINSY.

We had imagined that the remarkable control which the application of a strong solution of nitrate of silver exerts over inflammation of the mouth and fauces, etc., was familiar to every practitioner. It is, therefore, with much surprise that we have seen in the *Medical Times* for July 21, a communication from Mr. J. D. Brown, of Haverfordwest, extolling the virtues of nitrate of silver in quinsy, and speaking of it as a novelty. He says,—"It is now five years since I adopted my present mode of treatment, and with unerring success. It is simply to apply a strong solution of nitrate of silver—forty grains to the ounce—by means of a large camel-hair brush, taking care to touch every part of the inflamed surface. This I repeat every eight or twelve hours, seldom having occasion for more than two applications; an aperient had better be given at the same time." We quite concur in the excellence of Mr. J. D. Brown's practice; but we cannot see the propriety of the following paragraph, with which he concludes his communication. "I am induced", says he, "to give this never-failing remedy additional publicity. I say *additional*, because Dr. Corfe has already spoken so highly of it, in his invaluable *Portraits of Diseases*, as having been first used in the Middlesex Hospital by Dr. Hawkins, in whose hands it has always been successful. I do not publish the result of my practice with any idea of claiming priority; I

know not how long Dr. Hawkins has used it." We would refer Mr. Brown to page 47 of vol. IV of the *Library of Medicine*, published in 1840, where the following words occur, in the article "Angina", by Dr. Symonds, of Bristol. "Of all the local remedies, there is none that can equal the nitrate of silver in applicability to all the varieties and periods of the disease." Dr. Symonds recommends it also in stomatitis; and he thus speaks of its use in *angina membranacea*: "The local treatment is, to say the least, of equal importance with the general. Caustic applications are the most successful: Bretonneau strongly recommends the undiluted muriatic acid, applied by means of a sponge; but we have a far more manageable, if not more efficacious, remedy in the nitrate of silver, which may be applied in substance, or in a strong solution." On referring to *Pereira*, 2nd edition, 1842, Mr. Brown will find that the nitrate of silver is recommended in inflammatory affections of the mouth and fauces. It was, we may add, long ago recommended by Guersent, Gendron, and Toirac. They all state that early cauterization with the nitrate of silver arrests a quinsy. Gendron used it in 1825. (Vide *Journ. de Méd. et de Chirurgie Prat.* 1834, t. v, p. 16.) It is surely not too much, to expect authors to consult one or two of the more recent standard works, to see whether their communications be really called for or not; or whether the results of their experience had not better be given as confirmatory of the views of their predecessors, than as original announcements.

PSYCHOLOGY.

DR. FORBES WINSLOW ON SOFTENING OF THE BRAIN.

DR. FORBES WINSLOW has published, as a separately paged Monograph, in his *Psychological Journal* for July, an interesting and instructive paper on SOFTENING OF THE BRAIN, which he read before the Brighton Medical Society, on the 4th of January last. Circumscribed headache, Dr. Winslow regards as one of the earliest symptoms of the insidious malady which, in its early stages, is often overlooked or misunderstood. "In three cases," says Dr. W., "which came under my notice, the only symptom of any importance (which existed for four years before the disease became fully developed), was an intermittent pain, severe in its character, in the posterior part of the head." When the nature of the malady is early discerned, and energetic treatment adopted, Dr. Winslow believes that, in the majority of cases, a cure may be effected: "The great, the primary remedy, is REST FOR THE BRAIN; and, as a sequence, REST FOR THE MIND. Unless this condition be imperatively complied with, nothing—literally, nothing—can be done. The medical treatment consists in a judicious adoption of those means which are calculated to restore a fibrinous or plastic state of the blood, and to promote its healthy circulation in the brain. The patient should live generously, and the digestive functions should be improved by the exhibition of gentle alteratives, tonics, and stimulants. After ramollissement has taken place, these remedies act by determining the blood to a portion of the brain where a defective supply exists; and, as it has been suggested, may act beneficially by causing the production of fibrine and cell-germs from the albumen of the blood. In non-inflammatory softenings, *rubefacients* must be applied, and the shower-bath used. The tonics found most beneficial, have been *zinc*, *iron*, *quinine*, and the vegetable acids. The patient will derive an advantage from the use of chalybeate aperient mineral waters. Small doses of phosphorus, perseveringly exhibited, have been found advantageous. I have, in some cases, given the nitrate of silver with benefit. A careful avoidance of mental excitement, and removing the individual from the scene of business, should be strictly enjoined,—the patient carefully abstaining from all excesses, paying particular attention to dietetic rules, refraining from the use of wine, spirits, coffee, and spices." (pp. 30-31.)

REPORTS OF SOCIETIES AND ACADEMIES.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

FIFTEENTH MEETING OF SESSION 1848-49. JUNE 26, 1849.

DR. ADDISON, PRESIDENT, IN THE CHAIR.

WOUND OF THE RADIAL ARTERY: CONSECUTIVE HÆMORRHAGE: LIGATURE OF THE BRACHIAL ARTERY. By H. B. NORMAN, ESQ. J. H., aged 13, thrust his hand through a pane of glass on March 4, 1848, and inflicted an irregular wound across the fore part of the arm, about an inch above the wrist. At the dispensary, a compress was secured by a roller passed tightly round the limb, the profuse bleeding having been previously arrested by some temporary measures. The arm became tense and painful in the evening, and the bandage was re-adjusted less tightly. After the lapse of a fortnight, the wound having partly healed, bleeding recurred. On March 26, he lost blood till he fainted. On April 1, a third bleeding took place; and on the following day, the hæmorrhage returning, the author was requested to see the patient, and found the lower part of the fore-arm swollen, tense, and hot; a sloughy opening marked the spot whence the blood had issued, and the surrounding parts were "boggy". Compresses were re-applied above and below the wound, in the course of the radial artery, and secured by a lightly-rolled bandage. The constitutional disturbance was augmented on the following day; the integuments about the wound sloughed, giving exit to bloody pus, and strong pulsations were distinctly felt over this part of the limb. The inflamed tissues were now freely divided, a poultice was applied, and a compress placed over the brachial artery. On the 4th, a further hæmorrhage determined the author to apply a ligature on the brachial artery. The constitutional disturbance continued for some time, but ultimately subsided; the lower wound assuming a healthier appearance. The ligature came away on the eighth day, when both wounds were healing, and on May 2, were closed.

The author regrets the wounded artery was not exposed in the first instance, and its bleeding ends secured by ligatures. He admits that compression may sometimes be effective where it is immediately resorted to, and great care exercised in its employment: of such practice being successful, he cites an instance. He considers the adoption of similar practice to that first referred to (viz., ligature at the seat of injury) in secondary hæmorrhage, a more open question; and observes that, in the case just narrated, the means seem to have been justified by the end, the circulation in both ulnar and radial arteries being arrested, and only restored subsequently in that part of the latter artery which was below the seat of injury. After the application of the ligature, the temperature of the afflicted limb was 2° Fahr. below that of the opposite, on several occasions when the comparison was made.

CASE OF DISEASED LARYNX, IN WHICH TRACHEOTOMY WAS THREE TIMES PERFORMED, AND A PORTION OF NECROSED OSSIFIED CARTILAGE WAS COUGHED UP FROM THE BRONCHUS, THROUGH THE ARTIFICIAL OPENING. By E. HUMBY, Esq., M.R.C.S. T. H., aged 53, passed the greater part of his life at sea, or in the West Indies. In April 1845, having had syphilis two years previously, he took mercury to relieve secondary pains. In July, severe catarrh was accompanied by pains, sore throat, loss of voice, and dyspnœa. Active antiphlogistic treatment proving unavailing in relieving the last symptom, tracheotomy was performed, and a silver tube worn for a month. This was then dispensed with for three weeks, but the recurrence of dyspnœa required its re-introduction. Mercury was then rubbed in: the patient was kept in a room supplied with a constant jet of steam, and iodine was given internally. In July 1846, the difficulty of breathing increasing, it was determined that the

opening should be enlarged, and a wider tube introduced. This was effected, with difficulty, by Mr. Liston, in consequence of ossification of the rings of the trachea, which the bone forceps were required to divide. In October following, Mr. Humby first saw the patient. He was then suffering from constant cough, muco-purulent expectoration, great constitutional excitement, with physical signs of mischief in the lungs. On November 14, Mr. Liston cut out a second piece of ossified trachea; and, in a fit of coughing which followed, a large piece of necrosed ossified cartilage (apparently a part of the cricoid) was coughed up. The patient died six days after this operation.—*Autopsy.* The right pleural cavity contained three pints of turbid serum, with lymph. The left lung was partially consolidated. The upper part of the larynx was nearly closed; the back of the cricoid cartilage was absent; the rings of the trachea were ossified; and in the left bronchus was a fragment of necrosed ossified cartilage. The principal points of interest in the case are, the great difficulty attending the operation, and the ejection of the dead bone from the bronchus.

Minute Anatomy of the Sudoriferous Organs. By G. Rainey, Esq., Demonstrator of Anatomy in St. Thomas's Hospital. The epidermis is composed of a superficial and a deep layer; the former consisting entirely of epidermic scales, the latter being made up of epidermic cells, excepting where perforated by the sudoriferous ducts. These layers are distinguishable from one another by the dark colour of the deeper layer appearing to present an undulating border. The fact of the cells being in one layer, and the scales in another, is contrary to the opinion generally entertained, that the epidermic cells become progressively changed into epidermic scales, as they approach the surface. It renders the explanation of the cause of the spiral course of the sudoriferous ducts more simple; for, as in this layer, the epidermic scales undergo no change in their structure, and but very little in their dimensions; the duct, being built up of these scales, must remain the same through the entire thickness of this layer, as when it first entered it. In the superficial layer, the sudoriferous ducts are composed of epidermic scales, so placed, that the long diameter of each is parallel with the axis of that part of the passage into which it enters. This part of a duct is destitute of membranous parietes, being merely a passage between epidermic scales. In the deep layer of the epidermis, the sudoriferous ducts are situated above, between flattened epidermic scales, with their long axis placed as before observed; and below, between epidermic cells in different states of development. Now, as some of the lowest of these cells are so imperfectly formed, as scarcely to have the character of cells, it must follow, that the part of the passage which is situated between such cells, cannot have its parietes well defined; and there must be a part in every duct (where the cells forming it are just coming into existence) so imperfect, that the sweat in entering it will pass through little more than a layer of blastema; it is for this reason, that the most inferior part of a sudoriferous duct becomes so indistinct, that its termination in the dermic portion cannot be distinctly made out; and it is in this respect that all the delineations of these ducts, which I have seen, are incorrect, and convey an erroneous idea of their exact structure. The parietes of these ducts are erroneously represented, as passing continuously from the dermis into the epidermis; the tube at this part being made to have the same diameter as elsewhere, whilst the fact is, that the lower portion of the epidermic part is conical, and narrowest below, being shaped like the end of a cork-screw, and the upper part of the dermic portion of the duct is rather conical also, but its base is above. The part of a duct, which is situated between the cutaneous papillæ, contrary to what is generally stated, is, in the place of being straight, very much curved, this being the part in which it gets its spiral form. The dermic portion of the duct is continued from the gland in a flexuous course to the dermic, where it terminates, by the membrane of

which it is formed, becoming continuous with the basement membrane of the papillæ. It is lined by a layer of epidermic cells, which get gradually indistinct towards the gland. Respecting the spiral and conical form of the sudoriferous ducts, it is observed, that this can only be acquired in the deep layer of the epidermis; since, in the superficial layer, the scales of which they are built up, undergo little or no change after they have once been protruded into it, and the dermic portion of the ducts is totally of a different structure to the epidermic. The form which the ducts take in this layer, is attributed to the changes which the cells here undergo during their transformation from mere nuclei into perfect cells, and their subsequent conversion into scales, these changes being confined entirely to the deep layer of the epidermis. The ducts here become conical, by the cells which bound them becoming more and more flattened vertically, in proportion as they become pressed upwards, the space between them gradually increasing, as they acquire the form of scales. Besides, this part of a duct is situated in a conical space between the papillæ, where, at its inferior part, the epidermic cells are much more crowded together than at its upper part. This relative difference between the number of cells, and the space containing them, would allow of their being more easily separated above than below, by the secretion passing between them. Respecting the spiral form, the increase in the dimensions of the epidermic cells during their growth from nuclei to perfect cells, and their subsequent flattening and conversion into epidermic scales, would have a tendency so to alter the thickness of this stratum of the epidermis, as to throw the passages between its cells, into a more or less zig-zag form. The changes which take place during the formation of cuticle, as well as during that of other structures, do not proceed with perfect uniformity, but are doubtless more active at one period, or in one state of the system, than at another. It is probable that the laminated form of the nails, the concentric osseous layers around the Haversian canals, and the length of the coils of the sudoriferous ducts, are the results of certain alternations of activity and repose of the processes by which they are formed. As there are no other glands in the skin of the hands and feet, I consider the sweat glands as those which furnish the oily or sebaceous matter with which these parts are anointed; and, in place of considering the sweat as an increase of the vapour which is at all times given off, as the insensible perspiration, regard it as an increased secretion of these glands. These are, in their less active state, sebaceous, and in their more active one, sweat glands. The vapour which is exhaled at all times from the skin, whilst in its normal state, is the fluid in which the solid material of the cuticle was dissolved, in order that it might be in a fit state to pass through the coats of the capillaries, having become separated from the solid component of the epidermic blastema, during the production of epidermic cells, and having penetrated the scaly layer of the cuticle, so as to arrive at the surface. In a minute state of division, the fluid part of the sebaceous secretion would doubtless form a part of this vapour.

Treatment of Pericarditis; especially on the effects of Bloodletting and Mercury. By John Taylor, M.D., Physician to the Huddersfield Infirmary. The author analysed, in respect to treatment, the forty cases of pericarditis, published in the *Lancet*, in 1845, and 1846. They are divided into—1. Those occurring in connexion with acute rheumatism, the subjects of which were previously in good health; and 2. Those occurring in connexion with renal disease, or in persons in a previously bad state of health. The patients in the first class, besides being in good health, were younger, and suffered from much fewer complications than those in the second class. Very few of those in the first class died, whereas all died in the second class. The conclusion is, that age, previous health, and the nature of complicating diseases, have more influence than treatment upon the termination of pericarditis.

The remedies, whose effects are examined, are chiefly BLOOD-LETTING AND MERCURY:—I. BLOOD-LETTING. The conclusions arrived at are the following:—1. The duration of pericarditis increases, in proportion as the time is longer, between the commencement of the disease and the first bleeding. 2. The duration of the cases bled after the first four days, is greater by one-half than that of those bled within the first four days from the invasion of the disease. 3. The influence of bleeding was more marked in the cases in which it was copiously and repeatedly, as well as early, practised, than in those in which blood was drawn less frequently and more sparingly. 4. Pericarditis is never extinguished at once, by bleeding, however early, or however copiously practised. 5. In several cases, the pericarditis was suspended for a limited time. The suspension, in every instance, was immediately consequent upon the local abstraction of blood. 6. It is probable, that renal has a longer duration than rheumatic pericarditis. 7. Blood-letting must be less copious, and is more frequently inadmissible, in renal, than in rheumatic pericarditis. 8. Blood-letting probably lessens the mortality, inasmuch as it lessens the duration of pericarditis; but direct proof of the reduction of mortality, is not to be obtained from these cases. 9. The abstraction of blood by venesection, cupping, or leeches, almost invariably relieved the pain at once, but not permanently. There is no reason to believe that any one form of bleeding relieved pain more effectually than another. 10. Blood-letting never lessened the frequency of the pulse, except when there were signs of the inflammation having abated. 11. The tendency to syncope, in some cases of pericarditis, renders it necessary to be very careful in abstracting blood by venesection. 12. Free venesection for pericarditis, does not always prevent the subsequent appearance of serous inflammation in other internal organs.

II. MERCURY. 1. The cases in which mercury was given within the first four days, had an average duration, less by five days, than those in which it was given later. 2. The cases in which salivation was produced within the first four days, had an average duration, less by two days, than those in which it occurred later. 3. It is difficult to determine how much of the benefit was due to the mercury, because all the patients who took mercury were likewise bled; and, in almost every instance, the two remedies were first employed on the same day. 4. The author is inclined to the conclusion, that the benefit was due, in a greater measure, to the bleeding than to the mercury; partly because the duration of the disease was more abbreviated in those who simply began to take mercury, than in those in whom salivation was produced within the first four days. The administration of mercury coincided with the bleeding, but the salivation did not; and the results are just what might be looked for upon the supposition that the benefit was due to the bleeding, and not to the mercury. 5. If the production of salivation had anything like the marked influence in arresting inflammation, and promoting the removal of its products, which it is currently believed to possess, the duration of the cases of pericarditis, after salivation, ought to have been much less than it really was. This is proved by a detail of the cases. (a) Salivation was not followed by any speedy abatement of pericarditis in sixteen cases. (b) Salivation was followed by pericarditis in five cases. (c) Salivation was followed by an increase in the extent and intensity of the pericarditis, in three cases. (d) Friction sound ceased two days before the mouth became sore in two cases. (e) Salivation was followed by a speedy *diminution* of the friction sound in two cases; it did not *cease*, however, for some days after. (f) The pericarditis *ceased* soon after salivation in two cases. In one of them, however, it had been declining for some days before. (g) Mercury was given, but no salivation was produced in seven cases. (h) No mercury was given, nor other treatment adopted in eight cases. (i) Cases are detailed, exhibiting the occurrence of various internal inflammations, during the time that salivation was proceeding. The cases comprise examples of endocarditis, pleuro-pneumonia, pneumonia, pleuritis, erysipelas, and rheumatism.

CHRONIC HICCUP AND VOMITING: DISCOVERY OF OXALIC ACID IN THE BLOOD. By ALFRED BARING GARROD, M.D., Assistant-Physician to University College Hospital. A report of this paper appeared at p. 690 of our last number.

CASE OF CALCULI OF THE PANCREAS, ONE OF WHICH ESCAPED INTO THE ABDOMEN, CAUSING DEATH BY INTERNAL HÆMORRHAGE. By OSCAR M. P. CLAYTON. J. R., aged 47, an inspector of police, eighteen months before his death, consulted the author, relative to frequently recurring dyspeptic symptoms, and a deep-seated pain at the epigastrium. Two or three months later, during an unusually severe paroxysm of pain, hæmatemesis to a considerable amount occurred. The attacks of pain recurred at intervals of two or three weeks, and when severe, were followed by more or less of hæmatemesis. Emaciation at the same time slowly increased. His death was attended by symptoms denoting some lesion, probably hæmorrhage within the abdomen.

On examination of the body twenty-four hours after death, coagulated blood, in large quantity, was found in the peritoneal cavity. The liver and alimentary canal were healthy. But the pancreas was much enlarged, and contained numerous calculi lodged in the dilated trunk and ramifications of the excretory duct. The duct itself presented an opening, through which the largest calculus had escaped into the cavity of the abdomen. This calculus, two-thirds of an inch in length, consisted of carbonate of lime, with traces of phosphate of lime, animal matter, and fat.

HEMIPLEGIA, ASSOCIATED WITH GREAT HYPERTROPHY OF THE HEART, TERMINATING BY RUPTURE OF THE AORTA, AND DISSECTING ANEURISM. By JAMES R. BENNETT, M.D., Assistant-Physician to St. Thomas's Hospital. A shoemaker, aged 52, was admitted into St. Thomas's Hospital on the 27th of February 1849. His habits had been temperate, and previous health good till within five or six months, since which time he had suffered from palpitation, vertigo, and headache. Fourteen days before his admision, he had hemiplegia. On his entrance he was still hemiplegic. There was evidence of a greatly enlarged heart; but of no obstruction to the circulation, either pulmonic or systemic. There was a slight diastolic bruit heard just below, and to the right of the left nipple, and there only. His general condition varied from time to time till the 21st of April, when the paralytic symptoms became suddenly aggravated. On the 24th of April he suddenly uttered a cry, indicated that he had pain in the chest, and in three or four minutes expired. Examination *post mortem* revealed an apoplectic clot in the left corpus striatum, surrounded by much softening of the brain, and a similar clot in the centre of the pons Varolii, surrounded by white softening. All the arteries at the base of the brain, and the smaller branches given off from them, were loaded with atheromatous deposits. In the left pleural cavity, there was between three and four pints of recently coagulated blood, which had escaped through a laceration in the costal pleura. This opening was surrounded by extensive extravasation of blood beneath the pleura, and the cellular tissue in the posterior mediastinum was throughout infiltrated with blood. On laying open the aorta *in situ*, there was found a transverse rupture three-quarters of an inch in length, immediately beneath the origin of the subclavian artery. Above the point of rupture, the arterial coats were not separated for more than a line or two in extent; but from this point downwards, as far as the iliacs, the artery was split up by the blood which had been forced along between the fibres of the middle coat. The aorta and its main branches were studded with atheromatous deposits. The heart was enormously enlarged. With the exception of a trifling opacity, all the valves and the endocardial membrane were healthy. The coronary arteries were healthy. In structure, both lungs and the pleura were healthy. The kidneys were pale and mottled.

The author considered the general arterial disease as the origin of all the subsequent structural changes in the heart and brain. The patient appeared

never to have had any arthritic disease, and there was nothing to indicate that the heart or pericardium had ever been the seat of acute or chronic inflammation. The hypertrophy of the heart was therefore referred to the loss of elasticity of the aorta, etc.; but the aortic valves might, in consequence of the force to which they were subjected, have allowed some regurgitation, and the existence of a diastolic bruit favoured such a view. The augmented nutrition of the heart, and the healthy state of the coronary arteries, were contrasted with the condition of the brain and its diseased arteries.

The President (Dr. Addison): It is a question how far the diastolic bruit was indicative of aneurism. To me it appears strongly indicative of it, being below the nipple. A very short time ago I saw an instance of it. The aneurism was seated behind the heart. But I doubt its being the result of injury to the valves.

Dr. Theophilus Thompson: One point of value connected with the paper is, that it is an illustration of Dissecting Aneurism taking place, in the absence of those causes which generally give rise to it. There was no decided rheumatic affection, or affection of the aorta. The loss of elasticity of the middle coat of the aorta is dependent generally on inflammation; but here there were no symptoms of inflammation about the aorta. Again, there was no rheumatism. On what did it depend? I think we may assume, that it arose from premature old age of that particular membrane. The appearances are very similar to those presented in old age; and in the absence of any symptoms of inflammation, and the presence of symptoms of senile degeneracy. It is most evident that the changes in the brain took place before the laceration of the coats of the artery; but this deficiency was favourable to the softening of the brain. I would remind the Society of the case of Moret, a physician, brought forcibly before my mind by the paper read. There was considerable softening of the brain, and paralytic symptoms, which subsided, and ultimately issued fatally, accompanied with rupture of the aorta, and the escape of pints of blood into the pleural sac. It was thought that disorganisation of the brain occurs by the effusion of blood between the two layers of the middle coat of the artery. Indeed, there was reason to think that this condition had existed for some days; and certainly this case seems to favour the opinion, that a condition of artery leading to laceration may often occasion softening of the brain and clots,—that the paralytic symptoms may subside, and that the cause of it is preliminary disease of the artery.

Dr. C. J. B. Williams differed from the opinion of the President, that a diastolic murmur could be produced by aneurism without interference with the aortic or pulmonary valves. He (Dr. W.) had met with instances in which regurgitant aortic murmurs were heard in greatest intensity at various spots between the left nipple and mid-sternum—their loudness depending, as he had long ago shown, on the proximity of the left ventricle to the anterior wall of the chest, which varied much with the enlargements and displacements commonly occurring in extensive disease of the heart. The atheromatous thickening of arteries was now generally understood to be of the nature of fatty degeneration, which, although apt to occur in the products of inflammation, and therefore being occasionally a sequel of arteritis, yet might take place as a perversion or degradation of ordinary nutrition in cachectic states, like other instances of fatty degeneration.

Dr. Peacock inquired whether the competency of the aortic valves had been tested by the action of a column of water, before the orifice was divided? If not, it was difficult to decide whether there was, or was not, regurgitation. [Dr. J. R. Bennett said, the experiment had not been performed.] Though considerable general hypertrophy of the heart was frequently seen without any material valvular disease, he thought such an extreme amount of hypertrophy and dilatation of the left ventricle, as existed in this instance, rarely occurred, unless there had been regurgitation through the aortic orifice. The murmur

heard during life supported the view that the valves had not been entirely competent. By far the largest proportion of cases of dissecting aneurism were similar in their result to that of Dr. Bennett,—the internal causation which led to the formation of the aneurism, being generally followed, in a very short time, by rupture of the external wall of the sac. Four or five cases were on record, in which the internal rupture had a similar situation to that in the present instance; and there was also another case, in which the sac burst into the left pleural cavity. In Dr. Bennett's case, the rupture of the vessels in the brain was antecedent to the formation of the dissecting aneurism; but, in some cases, the sudden obstruction to the flow of blood caused by the aneurism, occasioned a second rupture of some other part of the vessel. This occurred in two cases which fell under his (Dr. P.'s) notice; and in several on record, the cavities of the heart had given way from the same cause. The case confirmed an opinion which he had before expressed, that the sac of the dissecting aneurism would probably always be found in the laminæ of the middle coat of the artery, and not between the middle and external coat. He had found, by experiment, that the external coat alone does not possess sufficient density to retain a column of fluid injected between it and the middle coat. In five or six cases which he had examined, in the recent state, he found the sac situated between the laminæ of the middle coat; and in two cases which he had had the opportunity of carefully dissecting (and which had been previously described as cases of dissecting aneurism, in which the sac was situated between the middle and external coat), he had found that a distinct layer of the middle coat had been separated with the external coat, forming the outer wall of the sac; so that the aneurism was really situated between the laminæ of the middle coat.[1]

Dr. Black thought that the author of the paper had submitted to their consideration, with much succinctness and ability, the most important points which the case involved. There was one point of much interest, in a physiological point of view (and not unimportant in its practical bearings), on which no observations had been addressed to the chair, and which, though distantly alluded to by the author, had not engaged that attention to which, from its importance, it was entitled. The case was one in which, from the amount of disease, little could be expected from remedial measures; at the same time he thought that that part of the treatment which had reference to the heart was, perhaps, in some degree misdirected. The condition of this organ, though enlarged in a great degree, and vastly hypertrophied, may certainly be considered a disease *per se*, yet it could not operate as such in the particular circumstances of this case; and the proof of this opinion is to be found in the fact, that the patient's health was good, and his circulation unembarrassed,—as far, at least, as his own feelings were concerned, or appearances indicated,—up to the time at which he became the subject of a paralytic seizure. Doubtless, in this case, the ossification of the arterial system, and the heart's hypertrophy, must have existed for a very long time; they had gone on, in some degree, *pari passu*, though the one must be considered consequent on, and rendered necessary by, the other. The phenomena illustrate the relation (unobscured by valvular disease) between hypertrophy of the heart, and general rigidity of the arterial system. Indeed, without this sequence, or pathological relation, it would be impossible that life should be prolonged; and this result becomes manifest from a moment's consideration of the powers by which the circulation is maintained. If the spring which has to be acted on, loses its elasticity, a greater force must be called into action, or the effects which depend on its reaction will cease. We are apt to be misled in such cases, if we direct our treatment to that which, in the particular circumstances, cannot operate injuriously, but must rather be considered necessary and advantageous.

[1] Dr. Peacock's Researches on Dissecting Aneurism were published in the *Edinburgh Monthly Journal* for October 1843, p. 871.

Dr. J. R. Bennett, in reply, doubted whether there was anything in the artery that could be called an aneurismal sac; but there were, undoubtedly, various depressions arising from the irregularities produced by the extensive deposits of atheroma, and it was possible the bruit might be produced by the passage of the blood along an artery whose surface was thus unequal. He admitted the question to be important,—as, *e.g.*, in reference to Dr. Black's view of its being undesirable to interfere much with the over-action of the heart, if this was the result, and the desirable result, of impaired elasticity of the artery. If the bruit was not held to be diagnostic of disease of the artery, there was nothing to lead to the conclusion, during life, that the hypertrophy of the heart was the necessary and salutary consequence of the state of the artery, and therefore not to be much interfered with.

After a short address from the President, referring to the great prosperity of the Society, the next meeting was appointed to be held in November.

MEDICO-CHIRURGICAL SOCIETY OF EDINBURGH.

Ninth Meeting of Session 1848-9. April 4, 1849.

James Syme, Esq., President, in the Chair.

Survival after Shipwreck, Starvation, and Fatigue. By Dr. Robert Paterson. The schooner Jacky, of Leith, with the captain, six men, and a boy on board, left Galatz on the 24th July 1848. Before sailing, the whole crew had suffered from ague; and when the vessel reached Constantinople, on the 20th August, two men were left behind, and two fresh hands substituted. During the homeward voyage, the weather was bad, and the winds contrary; and on the 27th October, while approaching the British Channel, a sea fell on board, and almost sunk her. She now became leaky, and the corn, with which she was laden, choked the pumps; half the men were sick, and all but the captain manifested singular apathy in contemplating the fate which awaited them. Some efforts were made to keep the leak under, by baling out the water in buckets. On the 28th, two of the crew were rescued by a Dutch vessel, and the mate was crushed to death between the vessels in a boat. Shortly afterwards, the schooner sank, and two of her crew were drowned; the survivors, consisting of the captain, the cook, and one seaman, reached the long-boat, which floated free. They had no provisions nor water on board the boat, and all three, especially the seaman, were hungry, weak with previous exertion, and labouring under ague. The weather was wet and cold, the sea was running high, and the boat required constant baling. The seaman died exhausted on the 29th. The survivors suffered at first severely from hunger, but the uneasy sensations from this cause soon passed away; their thirst was partly appeased by licking the rain-drops off the thwarts of the boat; the cook, contrary to the advice of the captain, also drank sea-water. On the evening of the 3rd November, (the sixth day of exposure in the boat), the cook died; his death was preceded by delirium. The captain had not strength to heave the body overboard; his legs became benumbed, he began to find his mind wandering—to see sights and hear sounds which he knew had no real existence; he continued to suffer from thirst, and from a pain in the right side of the chest. He had, however, sufficient resolution to abstain from tasting the sea-water, and kept the boat afloat by baling with a tin canister. On the morning of the 5th November, after fully *eight days* exposure in an open boat, without a morsel of food, and only a few rain-drops for drink, cold, wet, and exhausted, almost speechless, unable to walk, or even to stand, with hollow eyes and ghastly countenance, he was taken on board the Anne, of Poole. He was now treated in the most kind and judicious manner, and when put ashore on the 17th November, at Kingston, in Ireland, was so far recruited as to be able to write to his friends. He returned to Leith on the 22nd November,

and from this period his case has been watched by Dr. Paterson. Sloughs, which had formed on the feet, separated, and the sores healed readily; he gained flesh fast, and by the middle of December was able to go about. On the 22nd December, after exposure for some hours to a frosty air in the country, he was seized with a severe rigor, which he believed to be a return of ague. Pain in the right side soon succeeded, together with cough, rusty sputa, and feverishness. There was dulness on percussion in the lower part of the right side of the chest, and dry crepitation was audible over the surface of the right lung. These symptoms yielded to appropriate treatment; but, on the night of the 29th December, he suddenly became sensible of extreme dyspnœa, and of acute pain, stretching from the epigastrium round the right side to the spine; the dulness of right side continued. On the 31st, there was marked resonance observed on percussing the right side; the pulse was small and feeble, and respiration laborious. He died on the 9th January 1849.

On dissection, the right lung was found reduced to the size of the fist, flattened, and tied down to the spine by recent lymph. There were two pints of flaky serum, and a quantity of air, in the right sac of the pleura. At the inferior portion of the lower lobe of the lung, there was a cavity of the size of a walnut, lined with delicate blue membrane, communicating with a large bronchial tube above, directly and freely, and opening below by a small narrow slit into the cavity of the right pleura. The cavern contained a little white tenacious mucus; the tissue surrounding it was somewhat condensed; there was no appearance either of gangrene or of tubercle in any part of the lung. The precise morbid process which led to the formation of the cyst could not be determined. It was probably formed during the patient's exposure in the open boat in October; and perforation of the pleura must have taken place on the 29th December, during the apparent convalescence from pneumonia. In the latter part of his communication, Dr. Paterson instanced a number of cases in which hunger and thirst had been endured for long periods. The sensation of thirst had been mitigated in the instance of Captain Bligh and his companions, by wearing their clothes after saturating them with sea-water. In the case of the captain of the Jacky, courage and hope, which never forsook him, probably contributed to support him under protracted sufferings.

Analyses of the Blood in Cholera. By Dr. William Robertson. Dr. R. grouped the cases under four heads, described the appearance and general properties of the blood in each, and exhibited the general chemical results obtained from thirty analyses, conducted according to Andral and Gavarret's process. Five of the analyses were made by Dr. Douglas Maclagan, one by Dr. Christison, and the rest by Dr. Robertson.

AVERAGE CONSTITUTION OF 1000 PARTS OF CHOLERA BLOOD.

	Fibrine.	Org. Serous Solids	Inor. Do.	Globules.	Total Solids.	Water.	Sp. gr. of Serum.	Sp. gr. of Blood.
Early stage	2·7	82·2	7·8	103·4	196·1	803·9	1030·6	1053·7
Early collapse ..	3·2	94·0	7·0	130·8	235·0	765·0	1033·7	1059·5
Collapse	3·2	101·2	6·9	130·0	241·3	758·7	1036·6	1066·4
Reaction stage..	3·5	76·6	6·6	126·7	213·4	786·6	1030·6	1057·9

Distinct indications of the presence of urea had been obtained both by Dr. D. Maclagan and by Dr. Wm. Robertson, upon testing blood taken from the heart and veins after death; and, on one occasion, Dr. Maclagan had obtained similar indications, upon examining blood drawn from the arm during the early stage of the disease. *Urea* seemed most abundant in the blood of patients who died during the stage of reaction; 1000 grains of blood yielding in one case 1·6, in another, ·73 of nitrate of urea. The chief conclusions which these analyses, coupled with certain phenomena of the

disease, suggested, were,—1st. That anæmia, or an impoverished condition of the blood, acted as a predisposing cause of Cholera. 2ndly. That although during Cholera the relative proportion of the blood constituents was rapidly and singularly altered, there was yet no evidence that the primary operation of the morbific poison was exerted upon the circulating fluid,—the chemical changes recorded were only the *effects* of the morbid process. 3dly. That the changes which the blood underwent, up to the period of reaction, consisted in a concentration of the serum from loss of water, and a loss of salts almost proportionate to the amount of water abstracted. 4thly. That the *proportion* of salts was lower during reaction or convalescence, than during the progress of the disease. For every 1000 parts of water, there existed, during the *early stage*, 9·7, during *early collapse*, 9·2, during *collapse* 9·1, and during *reaction* only 8·4 parts of mineral constituents of the serum. That, consequently, the phenomena of the stage of collapse could not be due to the loss of salts, and that the saline treatment did not rest upon a good theoretical foundation. 5thly. That the changes observed during reaction were probably due, in part, to absorption of fluid into the circulation, and consequent dilution of the blood. This absorption sufficiently accounted for the small per-centage of inorganic serous solids during reaction, and might assist in explaining the marked diminution of the organic serous solids. 6thly. That during reaction the fibrine was often proportionately increased, and that there was reason to believe that blood-corpuscles were at the same time rapidly formed. 7thly. That the albumen, which was withdrawn from the circulation, was metamorphosed, converted into tissues, excreted by the bowels, and, in most cases, likewise excreted by the kidneys. In nearly eighty per cent. of the urines examined during convalescence, albumen was detected; its absence might accordingly be regarded as exceptional. 8thly. That the formation and retention of urea in the blood was always to be dreaded during reaction, and hence that the use of diuretic remedies, and especially of such as were believed to possess the property of expelling urea from the system, was clearly indicated. Tabular statements of the analyses were exhibited.

Dr. Christison inquired, if an experiment which he had made during the former epidemic, and which proved that the dark blood of Cholera was yet quite susceptible of arterialization, had been confirmed on this visit of the disease. He had found, that the blood when defibrinated by agitation in a phial with pieces of zinc, rapidly assumed the arterial hue when subsequently agitated with atmospheric air or with oxygen gas.

Dr. Douglas Maclagan and Dr. William Robertson had both recently confirmed the accuracy of Dr. Christison's observation.

Poisonous Food. Dr. Christison had been recently consulted in the case of a lady and three children, who, about an hour after dinner, all became suddenly and seriously ill, the chief symptoms being vomiting, with sickness and great depression. The soup, of which all had partaken at dinner, was made of hare. The cook declared that the hare, although not in season, was in good condition; but that it was an *old hare*, and had *very yellow bones*. She next day ate the remainder of the soup herself, and suffered like the other members of the family. All recovered. Dr. Christison was anxious to hear if other members of the Society had met with similar cases.

Dr. Douglas Maclagan had been four times consulted on account of somewhat similar symptoms supervening upon the use of rabbit-pie. On two occasions he had unsuccessfully applied the tests for mineral poisons, for jalap-resin, etc., to the remains of the pie. There could be no doubt that the vomiting and purging were connected with the rabbit, and not with the paste, nor with any other article consumed at the same time. In some of the instances, all who ate of rabbit suffered, while those who partook of other articles at table escaped.

SOCIETY REPORTS. It was then moved by DR. CHRISTISON, seconded by DR. DOUGLAS MACLAGAN, and unanimously carried, "That the Secretaries be instructed to communicate the authenticated minutes of the Society to the editors of the *Edinburgh Monthly Journal*, and that the report of its transactions thus furnished should be the only one authorized by the Society."[1]

TENTH MEETING. SESSION 1848-9. APRIL 18.

DR. BEGBIE, V.P., IN THE CHAIR.

DISSECTIONS OF STUMPS AFTER AMPUTATION. MR. SPENCE produced several dissections of the stumps. He first called the attention of the society to the mass of muscular tissue, which overlapped the bones in some of his preparations. The leg belonging to one of these stumps had been amputated by the flap operation, twelve years before the patient's death, and the stump was still well-formed, and covered with muscle. He was inclined to doubt, whether the atrophy was so considerable in the muscles of stumps as was generally believed. It had been stated by Mr. Hargreave, that after amputations performed during early life, the bone included in the stump continues to grow in length, and two of the bones (femora) now before the society, seemed to have acquired such increase. In the upper part of a femur, from the University Museum, there was likewise an apparent increase in length, but this was probably due, not to any fresh deposit of osseous tissue, but to the altered obliquity of the neck and shaft of the bone, consequent upon the weight of the patient's body having been, after the amputation, allowed to rest principally upon the other leg. Two preparations exhibited an elongated point of bone protruding from the surface, which had been divided by the saw; the end of the bone was *conical*, not *rounded off*, as after amputations in the adult. Mr. Spence believed, that *neuromata* were unavoidably formed, when nerves were divided,—by whatever method amputation was performed, and however deeply the nerves were covered. When a nerve was cut across, the neurilemma retracted, the nervous fibrillæ projected, and ultimately became firmly connected with lymph effused about the point of section. Some fibrillæ were spread out upon the surface of the lymph, others were imbedded and interwoven in it. The tumours thus formed were not productive of pain, unless exposed to pressure between the bone and skin; or so thinly covered, as to be affected by atmospheric influence. The size of these neuromatous tumours was not dependent upon their being more or less thickly covered, and in some of Mr. S.'s dissections, very large ones were exposed, deeply seated in the stumps. An extended investigation, by means of similar dissections, might lead to more determinate views as to the plans of operating best adapted for securing a well-formed stump.

INTESTINAL CONCRETIONS OF EXTRAORDINARY SIZE, IN A YOUNG FEMALE. (IN A LETTER FROM DR. RITCHIE, PHYSICIAN TO THE ROYAL INFIRMARY, GLASGOW.)[2] "The mass, consisting wholly of long human hair, was extracted after death from the stomach of a girl aged twenty-one, admitted into the Royal Infirmary under my care, on the 4th of October 1848. She came in with great meteoric distension of the abdomen, feculent vomiting, and the other usual symptoms of obstructed bowel: the menses were stated to have been always irregular. On the 5th, when I saw her first, I perceived some hardness to the left of the umbilicus, but the presence of the tumour in question was concealed by the great tympanitic swelling of the bowels till the 12th, two days previous to which, the constipation had been overcome, and the general distension removed. The tumour, which lay in the epigas-

[1] Our Reports are made up from our Edinburgh cotemporary and the *Medical Times*.

[2] We have slightly curtailed Dr Ritchie's letter from the *Edinburgh Monthly Journal* for July 1849.

trium, and encroached a little on both hypochondria, and which also presented a rounded convex exterior, and a well defined margin, simulated the liver so strongly, that it was mistaken for that organ, till it was seen that, on grasping it through the parietes, and pulling it downward, a considerable hollow space could be produced between its upper edge and the ensiform cartilage. Immediately on the removal of the ileus, (which happened under the steady use of half a drachm of magnesia every four hours, an enema of tepid water three or four times daily, warm fomentations to the abdomen, and a grain of opium every six, and then every eight hours), the pulse began to rise, severe diarrhœa came on, with aphthous exudations on the throat, and she died on the 24th, or twenty days from admission.

Dissection. The tumour was found to be situated in the stomach, on opening which, a mass of the precise shape of that organ was extracted. It weighed twenty one ounces, and, except at two parts, corresponding to the line of the greater curvature of the stomach, where for about an inch and a half at each part, there was an incrustation of a dirty or ash-coloured pasty substance,—it consisted exclusively of an accumulation of coils of moist female hair. The stomach, where in apposition with the incrustation on the hair, was ulcerated nearly to the peritoneal coat. The mucous lining was here and there highly injected, and throughout it, numerous elevated patches, consisting of groups of ulcerated follicular orifices, were observed. The pylorus was rather thickened: two inches to its left there was a cluster of ovoid bodies, varying in size from a dried raisin to a garden pea. The small intestines were greatly inflated—very vascular, pretty firmly glued together, and the inflammation extended over much of the omentum, mesentery, and peritoneum. The pelvis was filled with thin fæces, from a rupture in the ileum, a few inches above the cæcum. Between this lesion and the cæcum, another hairy concretion of one and a half ounces weight, and a little above the rupture a third similar mass of half an ounce in weight, were discovered. These consisted wholly of hairs of various sizes, similar to those in the stomach. The lungs were congested, and slightly emphysematous.

It was ascertained by inquiries at the girl's mother, that for many years she could not be restrained from pulling hair from her head and swallowing it, while at work as a factory weaver.

Dr. Keiller stated that he had met with a case precisely similar in Dundee. The patient, a factory-girl, was in the habit of eating tow, and the tumour found in her stomach after death resembled exceedingly that now before the Society.

Eleventh Meeting.—Wednesday, May 2, 1849.

James Syme, Esq., President, in the Chair.

Preternatural Anus. Dr. Douglas Maclagan communicated the history of a remarkable case, which is to be published.

Involuntary Grinding of the Teeth. By Dr. M. W. Taylor, of Penrith. The patient, a clergyman, eighty years of age, had for many years been subject to headaches: and of late had become imbecile, after two slight attacks of paralysis. The grinding had commenced six years ago, and of late had been almost incessant, the jaws being never at rest (except during sleep) for five consecutive minutes. The sound emanated from the left canine and incisor teeth, the enamel of which was quite rubbed away: it was heard even across a field, and strongly resembled the cry of the corn-crake. Dr. Taylor did not consider that the grinding, in his patient's case, was referable to the gouty diathesis, or to uneasy sensations in the teeth: but to disease within the cranium. From an analogous cause, it was frequently met with in hydrocephalus: when intestinal irritation from worms was accompanied with grinding of the teeth, the symptom was manifestly reflex.

AMPUTATION AT THE ANKLE-JOINT. DR. RICHARD MACKENZIE read an account of a method of amputation at the ankle-joint, by single flap, which he had devised, and which had been five times performed on the living subject by himself and Dr. Douglas Maclagan.

The author recommended this operation in some cases to which Mr. Syme's method was not easily applicable, especially when the integuments on the outer side of the heel were in an unsound state, the flap being derived from the skin covering the inner and lower sides of the calcaneum, and supplied with blood by the branches of the posterior tibial artery.

MR. SYME remarked, that it was important to know, that by this mode of operating, a better flap might in certain cases be obtained. He considered the operation difficult, and believed that the great length of the flap might render it liable to sloughing. His own mode of operation had now been followed by himself in between thirty and forty cases, and in a number of cases by other surgeons, yet he was not aware of any instance in which sloughing had been observed, attributable to violence necessary in detaching the soft parts from the calcaneum. From this cause, therefore, experience had shown that no risk was to be apprehended.

MR. SPENCE and DR. MACKENZIE made some remarks upon the distribution of arteries to the soft parts of the heel. The former thought the chief vascular supply was derived from the peroneal artery, and from the outer side of the ankle; the latter contended, that the branches from the posterior tibial and on the inner side of the ankle, were fully more important.

MANUFACTURE OF CHLOROFORM. DR. TAYLOR read a communication from the MESSRS. SMITH, of Duke-street, upon the most economical process of preparing and purifying chloroform. They detailed, with great minuteness, the most approved modes of testing the qualities of the materials, of conducting the distillation, and of rectifying the product. They could now sell a chemically pure article for 8*d.* an ounce, or 10*s.* a pound by weight, and doubted if the pure drug could ever be produced at a less cost. It had been stated in the *Pharmaceutical Journal*, by Mr. Morson, that the best specimens of Scotch-made chloroform underwent spontaneous decomposition when exposed to light—that free chlorine and muriatic acid were evolved, and might be detected by their reactions on litmus: but a half-filled phial was exposed to the solar rays for four weeks, in Messrs. Smith's window, and even at the end of that period, the fluid had no action whatever upon litmus paper. They have noticed, that pure chloroform is decomposed by direct solar rays when the thermometer is at about 100° F., but *out* of the direct rays, the brightest sun light seems to have no effect.

TWELFTH MEETING. WEDNESDAY, MAY 16, 1849.

JAMES SYME, ESQ., PRESIDENT, IN THE CHAIR.

CONGENITAL EXTROPHY OF THE URINARY BLADDER. DR. MACKAY exhibited a child, a few weeks old, with congenital extrophy of the bladder. A sort of truss had been adapted to prevent the chafing of the clothes, and the escape of urine over the external surface of the abdomen.

MR. SYME remarked, that an operation had been proposed, and in one case executed, for the cure of this malformation. No good was to be expected from such a procedure. The appropriate treatment consisted in applying a suitable receptacle for the urine. In one case which he had met with, the patient lived for many years in a tolerably comfortable condition, being enabled to perform the duties of a public office, to take a good deal of walking exercise, and even to ride upon horseback. He wore a silver vessel, properly secured, over the seat of the disease, to prevent the dribbling away of the urine.

PREPARATIONS ILLUSTRATIVE OF THE COURSE OF TUBERCLE IN THE LUNGS. DR. BENNETT exhibited some preparations in proof of the sanability of phthisis

pulmonalis. In one, a large deep cicatrix was seen in the upper lobe of the lung. The patient had died in the Infirmary of delirium tremens. From the account given by his friends, it appeared, that about twenty years before his death he had been affected with the ordinary symptoms of consumption, but that he was restored to health, apparently in consequence of improvement in his circumstances and habits of life. In another preparation, two stellate puckerings on the surface of the lung were found to correspond to two caverns with indurated walls, which seemed to be undergoing the process of cure. In other two preparations, numerous small gritty masses were disseminated; these were specimens of abortive miliary tubercle. These appearances were exceedingly frequent,—Dr. Bennett had met with them so often in the post-mortem examinations conducted at the Royal Infirmary, that he had stated, in a communication read several years ago before this society,[1] that evidences of tubercular disease were found in one-third or one-fourth of all who die after the age of forty.

Dr. Christison remarked, that although it had been satisfactorily shown that tubercle often underwent spontaneous cure, yet authentic examples of recovery from *confirmed* phthisis pulmonalis were exceedingly rare. The case which had furnished the preparation first exhibited by Dr. Bennett was peculiarly interesting; it was probably an instance of recovery after the formation of cavities and development of the phthisical cachexia.

Exostoses. Mr. Syme exhibited an exostosis which he had removed from a patient in the Infirmary. The most common seat of these tumours was the distal phalanx of the great toe: they were also frequently found upon the *linea aspera* of the femur, above the inner condyle. From this latter situation the tumour had been removed. In size it equalled a small orange: it was nearly spherical: consisted of bony tissue: and was coated on its outer surface with cartilage. These tumours were not malignant, and seldom caused much inconvenience; when, however, they attained such a size as that now exhibited, it was obviously expedient to remove them. It was easy to detach the tumour by the *cutting-pliers*, and the only bad consequence to be apprehended was tedious suppuration. In the present instance, notwithstanding the size of the mass removed, the wound healed readily.

Dislocation of the Humerus, with Fracture. Mr. Syme had lately met with a case of dislocation of the head of the humerus into the axilla, complicated with fracture about the middle of the humerus. This double accident was exceedingly rare. The patient had fallen through a trap door into a cellar, and his arm had become entangled among the spokes of a ladder during the fall. It was determined that the dislocation should be reduced, before an attempt was made to set the fractured bones. For this purpose the fore-arm was bent upon the humerus, and a bandage was then rolled round the whole arm as high as the shoulder. Over this a couple of Gooch's splints were placed; the lac was then attached above the seat of fracture, and secured by another bandage. Extension was made in the direction of the long axis of the trunk, a large pad being first stuffed into the axilla. Reduction was readily effected, and the subsequent progress of the case had been satisfactory.

Dislocation of the Astragalus. By Mr. Syme. The accident had occurred three months ago, in the usual way. There was no external wound, but the astragalus could be distinctly felt under the integuments of the ankle. Although there was considerable deformity of the foot, the limb was likely to be useful, and there was at present no necessity for cutting out the astragalus, as Dupuytren recommended in all such cases.

Case of Hydrophobia. By Dr. Lucas, of Dalkeith. The most interesting points in the case were thus summed up by Dr. Lucas: 1st. That eight

[1] Edinburgh Monthly Journal.

weeks elapsed between the infliction of the bite and the invasion of hydrophobia. 2nd. The wound healed, and did not subsequently become irritated. 3rd. With the exception of spasm of the respiratory muscles, no muscular effort was observed independent of volition. 4th. The physiological manifestations consisted in an intense exaltation of sensibility of the cutaneous surface, and of the reflex system of nerves. 5th. The psychological phenomena were a highly-developed antagonism between the morbid emotional and normal reflex faculties. 6th. Death took place by exhaustion consequent upon the direct and sympathetic excitement of the nervous system.

Dr. W. T. Gairdner had performed the post-mortem examination. There was some ecchymosis on the pleura, on the mucous membrane of the pharynx, and among the muscles of the neck. The right side of the heart contained a small quantity of frothy blood, and a large amount of air; and there was no evidence that this was attributable to putrefaction. Dr. G. had seen a similar collection of air in the heart of a patient who had been poisoned by carbonic acid gas. The nervous system had been most carefully examined, especially the origins and course of the eighth pair, but no evidence of inflammation or structural lesion had been detected.

Mr. Dick (of the Veterinary College) considered the hydrophobia of the human subject a disease of the imagination.

Dr. Hughes Bennett thought that the symptoms of hydrophobia clearly pointed out a lesion of the functions presided over by the eighth pair of nerves. It was true that structural lesion had not been observed in this case, either at the origin, or in the course, of the eighth pair; it must, however, be recollected, that in these excito-motory diseases, structural lesion was not essential. He quite believed that symptoms like hydrophobia might be induced by fright; a recorded case had proved that a bitten man might even die while the dog that bit him lived. There was, however, no doubt that the disease termed hydrophobia could be communicated from animals to man; and Magendie had caused a dog to die rabid, by inoculating it with saliva from a human subject suffering from hydrophobia.

Dr. Gairdner alluded to the experiments of Dr. Hartwig, of Berlin, as tolerably conclusive evidence that rabies could be communicated, at least among the lower animals, by inoculation.

Mr. Dick attached little importance to Hartwig's experiments, because, although he had laboured at the subject for five years, his inoculations only took effect in a very few cases. In similar experiments he (Mr. D.) had been uniformly unsuccessful. So convinced was he that the disease was not to be propagated in this way, that he took no extraordinary precautions in handling rabid animals, and had once allowed the saliva of a rabid dog to rest upon a sore upon his hand without any unpleasant consequences.

Dr. Christison had formed a very different estimate of the value of Hartwig's labours, which, he thought, set this controverted subject for ever at rest. Hartwig had, in five years, made fifty experiments upon the inoculation of canine rabies, using, in different experiments, different fluids, such as the blood, mucus, and saliva, of the rabid animal. In fourteen of these inoculations he had transmitted the disease from one animal to another, and had succeeded more uniformly with the saliva than with the other fluids employed. It was true that he had failed in some instances, but such failures did not invalidate the results obtained in about one-fourth of his experiments; as well might it be argued, that because vaccination sometimes failed, it was therefore impossible to communicate the vaccine virus from child to child. Dr. C. had, many years ago, in Paris, witnessed a series of experiments on the inoculation of rabies. They were performed at the Combat des Animaux, by some hospital "internes," under the direction of some able physiologists. It was found that when blood was used, the inoculation did not take effect; by far the most effectual medium was the "barve," the peculiar froth which collects about the mouth of the rabid dog. By using this fluid, the French

experimenters managed to induce the disease in several successive experiments, and, in fact, to keep up a *stock* of rabid animals for several months. It was stated by Hartwig, that dogs were subject to other diseases, resembling rabies; but there was one symptom of the true disease which was never observed in its spurious forms. He alluded to the changed character of the animal's bark,—a peculiar, checked, short, sharp, anxious howl. Hartwig, who, as head of the Veterinary College at Berlin, had immense opportunities of observation, laid great stress upon the importance of this symptom; and in the Parisian experiments, the peculiar bark of the rabid dog had been remarked both by the late Dr. Cullen and himself. He suggested to Mr. Dick, that, in some of the experiments performed in Edinburgh, and in which negative results were obtained, the animals might possibly have been affected with some of the diseases simulating rabies.

Mr. Dick proposed to repeat his experiments, and would feel glad that they should be witnessed by members of the Society. He well knew the bark of a rabid dog, described by Professor Christison, and when he heard it, he could, from it, pronounce the dog to be rabid.

The President (Mr. Syme) had, twelve years ago, occasion to treat the only case of hydrophobia which had been seen in the Royal Infirmary for forty years. A very prominent symptom was the ejection of saliva by hawking or spitting; and he presumed that the "pretty copious salivation," described by Dr. Lucas in the case of the boy at Dalkeith, was of the same description.

Thirteenth Meeting of Session 1848-9. June 6.

Professor Christison in the Chair.

Oxalic Diathesis. Dr. Begbie read an account of four cases. They showed how important it is to examine the urine in every instance of obscure disease. In three of the cases the disease had been discovered early, and recovery had followed the use of nitro-muriatic acid. In the fourth it had commenced many years before the intimate connexion of deranged health with the oxalic acid diathesis was made known, in its full extent, to the profession; and hence the true source of the patient's sufferings was not suspected, till a comparatively short period before death. This patient had placed himself under Hydropathists and Homœopathists, and those whose easy virtue permits them to adopt infinitesimal doses, when convenient, without altogether forsaking the precepts of regular practice. At last, Dr. Begbie, whose patient he had long ceased to be, suggested, through a friend, that Dr. Prout should be consulted, when the real source of his disease became apparent, and much relief was afforded. What proportion of cases falling under the term of hypochondriac disease is dependent on oxaluria, does not very clearly appear. But, in little more than four years, since the publication of Dr. Golding Bird's book on urinary deposits (in which the great frequency of the oxalic diathesis was first pointed out), enough has been observed to show that a great amount of suffering might have been saved, had the use of the microscope for the examination of the urine in obscure diseases been adopted. Every day's experience proves that it is an instrument not much less necessary for the practice of medicine, than the stethoscope.

Poisoned Pastry. Professor Christison exhibited a green powder, purchased at a confectioner's in Edinburgh, designed to colour jellies, &c., which he had found to consist of sugar mixed with verdigris and arsenite of copper. His attention had been drawn to it by the severe illness of two maid-servants, from having eaten some jelly coloured with it. Thus the fatal occurrence at Northampton, last year, from the use of the so-called emerald-green, for a similar purpose, has not yet put a stop to the monstrous practice of selling a deadly poison to ornament food.

FOURTEENTH MEETING OF SESSION 1848-9. JUNE 20.

JAMES SYME, ESQ., IN THE CHAIR.

CHOLERA. By DR. W. GAIRDNER. His account of the *post-mortem* appearances in Cholera, included all the cases examined in the pathological theatre of the Royal Infirmary. The memoir will be found at p. 749 of this number.

In answer to questions, Dr. Gairdner stated that pulmonary diseases were rare among the cases examined, that morbid conditions of the uterine system were frequent, and that the solitary glands of the intestines were enlarged in about two-thirds of the whole number. DR. W. ROBERTSON and DR. FLEMING showed, by a reference to cases, that the alleged protection afforded to syphilitic patients under the influence of mercury, introduced as a question by MR. SYME, who was in the chair, was erroneous.

SCARLATINA. DR. NEWBIGGING read an account of the disease, as it appeared last autumn, among the children in John Watson's Institution (for children) near Edinburgh. There are a hundred boys and girls, from seven to fourteen years of age. The first case occurred in the beginning of September, and in five or six weeks twenty-five were attacked. One, a boy who had been for some time before in delicate health, died. In five, anasarca occurred, which yielded to slight treatment. The urine showed albumen by the test of heat, not merely in the dropsical cases, but *in all attacked with the fever.*

FIFTEENTH MEETING OF SESSION 1848-9. JULY 4.

DR. MACLAGAN, SENIOR, IN THE CHAIR.

CHRONIC ECZEMA AND IMPETIGO. By DR. HUGHES BENNETT. After noticing the frequent connexion of the acuter forms of eczema with constitutional disease, or derangement of the general health, as with strumous tendency in the young, and, in after life, with dyspeptic disorder and the oxaluric, phosphatic, or uric diathesis, he laid it down as a rule, that generally, in proportion as eczema becomes more chronic, it is the less dependent on constitutional disturbance. The form of eczema in which the simple treatment he had to recommend had been so successful, was eczema with impetigo in a chronic state, or the chronic form of what dermatologists term eczema impetiginodes. Dr. Bennett distinctly regarded this disease not as a mere form of eczema, approaching by its subsequent effects on the integuments to impetigo, without losing its vesicular character, as Bateman taught, but as a combination of the two diseases, an intermixture of the vesicles of eczema with the pustules of impetigo,—an idea which the last-named author hints at, but hardly adopts as the character of his species impetiginodes,—the truth being, that the co-existence of two or more cutaneous diseases on the surface at once is an observation which it has required time to mature. The simple treatment, found so successful, probably did not differ much from mere water-dressing. It consisted in the continued, not the mere occasional, application of a weak alkaline lotion. Two drachms of subcarbonate of soda were dissolved in a pint and a half of water, and lint wet with this lotion was kept in exact contact with the eruption, evaporation being prevented by a covering of oiled silk or gutta-percha cloth. In proof of the efficacy of this treatment, Dr. Bennett recounted several obstinate cases: one in which the disease had affected a gentleman's face at the roots of a thick black whisker; this disease had lasted for a long time, but began to yield as soon as the patient consented to the removal of the whisker, so that the lotion might be applied exactly to the seat of the eruption. In a second case the disease was seated at the roots of the beard, and this also was cured as soon as a proper mode was fallen upon of adjusting the wet lint to the part. In a third case, the disease was on the pubes and adjacent parts, and had resisted some of the ordinary modes of treatment for eight years. The cure in this last case was more tedious, owing not merely to the obstinacy of an affection

which had lasted so long, but also to the difficulty of complying with the requisite conditions of the treatment, owing to the extent and inequality of the surfaces where it had its seat. But within three months from the commencement of the treatment, the disease had entirely disappeared. Dr. Bennett attributed the cure in these cases wholly to the local treatment, though in the first the arsenical solution, in small quantity, had been employed simultaneously for a short time, and in the last the patient had gone to Harrogate, and used the waters before the complaint had altogether disappeared. In some of the cases in which the crusts were particularly thick, poultices were applied before the lotion was resorted to.

Use of the Oblique Muscles of the Eye. By Mr. Struthers. The design of the paper was to show, by considerations drawn from comparative anatomy, that the use of the oblique muscles is to produce rotation of the eye on its antero-posterior axis.

Sixteenth Meeting of Session 1848-9. July 19.

Scirrhous Induration of the Peritoneum. Dr. W. Gairdner, Pathologist to the Infirmary, exhibited a specimen of schirrhous peritoneum. The patient in the infirmary was under Dr. Alison. He was affected with jaundice of a green tint; there was pain and tumefaction on the right side; but neither of these symptoms seemed distinctly referable to the liver. At the last, fluctuation in the abdomen became perceptible. *Inspection after death.* There was a considerable quantity of blood in the abdominal cavity; the peritoneum was covered with a layer resembling inflammatory exudation, but which really was nothing more than the decolorized fibrine of a part of the extravasated blood. The peritoneum was hardened and thickened, particularly in the appendiculæ epiploicæ of the right side, in the mesentery close to the intestines, and in the omentum minus adjacent to the stomach. Minute tuberculated spots occurred in many places, in particular throughout the pelvic peritoneum. There were numerous ecchymoses in the pelvic peritoneum. There was no manifest source of the hæmorrhage, and no sign of the rupture of any considerable vessel was obtained by the injection of the aorta or of the vena cava. The mesenteric glands, though so close to one of the principal masses of the disease, were wholly unaffected, as were the liver and the other glandular organs of the body: in the peritoneum only were there marks of carcinomatous degeneration. In the tuberculated spots of the pelvic peritoneum, distinct cancerous corpuscles were discovered under the microscope. Dr. Gairdner referred to a case of soft cancerous degeneration of the peritoneum which had fallen under his observation, where, as in this instance, the mesenteric glands were unaffected, though close to the seat of the disease.

Dissecting Aneurism of the Aorta. By Dr. W. Gairdner. The patient, a man fifty-four years of age, had been given to intemperance. He had been drinking for two days, and on the third, when going to his work, he felt ill. The first symptoms, pain, &c., were referred to the stomach; and as he had suffered under a stomach complaint from early youth, his illness does not appear to have caused much alarm. When Dr. Sidy saw him, the pulse was 75, and soft; the heart's action feeble, and no bruit could be heard; there was no palpitation, nor were any indications of disease of the heart or of the great vessels gathered from the account he gave of himself. Dr. Sidy proposed to examine his chest more particularly at his next visit, but before he returned, the patient had died suddenly. On opening the body, blood was found within the pericardium in very large quantity. Both sets of valves and the heart itself were quite healthy, and no appearance of disease was found, till a large portion of the aorta was removed. On the interior surface of this vessel, a short distance from the heart, was discovered a transverse

slit, including not much less than its whole circumference; through this slit the blood had penetrated into the substance of the middle coat, between the layers of which it had made its way so as to escape through the outer coat into the pericardium, just above the right auricle. In the coats of the artery itself, there was no atheromatous, or other perceptible kind of degeneration; it seemed to be as nearly as possible in a healthy state. Dr. Gairdner, after reference to Dr. Peacock, Dr. J. Davy, and other authorities, stated it as his opinion, that dissecting aneurism of the aorta, probably originated more frequently from external violence than had hitherto been admitted. Though there was no evidence of violence in the case before the society, yet, as the man had been intoxicated for a good many hours shortly before his illness commenced, and as there was nothing in the state of the coats to account for the laceration, and more especially for its great extent, he was disposed to think that a fall, or some other kind of external force, had been concerned in the rupture of the vessel.

Connexion of Enlarged Thymus Gland with Anæmia. In illustration of the connexion between the anæmatous state and unusual size of the thymus, Dr. W. Gairdner exhibited a drawing of the neck and front of the thorax, showing a large thymus in a woman twenty years of age, from a case of an anæmatous character, which had recently occurred in the Infirmary.

Anomalous Course of the Artery of the Bulb. Mr. Spence exhibited an interesting dissection of the pelvic arteries to illustrate an undescribed anomaly of the artery of the bulb, which took such a course, that it must necessarily have fallen under the knife, during the division of the urethra in lateral lithotomy.

Bloody Cyst over the Tuberosity of the Right Ischium. Dr. James Dunsmure exhibited a cyst of considerable size, which he had recently removed from over the tuberosity of the right ischium. The contents were not unlike the fluid in hæmatocele. The man was a weaver, and the tumour had caused him so much inconvenience, that he had cut a hole in his bench to relieve it from pressure. Microscopic examination detected only the elements of the blood,—there was, however, an unusual abundance of white corpuscles.

The Society adjourned till the first week in November.

MISCELLANEOUS INTELLIGENCE.

London University. The long-expected supplementary Charter has been received. It enlarges the powers of the Senate, and contains two important provisions: one for the admission of students from all the other universities of the United Kingdom; the other enabling the Senate to institute examinations for certificates of proficiency in any separate branch of art or science, as they may see fit, without requiring the student to graduate.

New Fellows of the Royal College of Physicians. Dr. Stroud, Great Coram-street; Dr. Swaine, Upper Seymour-street; Dr. Philp, Kensington; Dr. Collier, Fitzroy-square; Dr. Wells, Reading; Dr. Shann, York; Dr. Munk, Finsbury-place; Dr. Abercrombie, Cheltenham; Dr. C. Handfield Jones, Sloane-street.

The Medical Directory. The management is henceforth to be under Mr. Churchill. We earnestly recommend every member of the profession to cooperate with him in his laudable endeavours to ensure the greatest possible amount of accuracy.

Scottish Public Health Bill. This measure has been delayed in consequence of the objections entertained, in Scotland, to some of its details.

APPOINTMENTS.

Arnott, J. M., Esq., Professor of Surgery in University College, elected Vice-President of the Royal College of Surgeons of England.

Green, Joseph Henry, Esq., Senior-Surgeon to St. Thomas's Hospital, elected President of the Royal College of Surgeons of England.

Hallett, Charles Henry, Esq., appointed Senior-Surgeon and Naturalist to the Southern Whale Fishery Company.

Mason, Frederick, Esq., appointed Surgeon to the Western Dispensary of Bath, on 27th June.

Owen, Richard, Esq., Hunterian Professor to the Royal College of Surgeons of England, elected a Corresponding Member of the Royal Academy of Sciences of Madrid, and an Honorary Fellow of the Royal College of Surgeons of Ireland.

Parkes, E. A., M.D., appointed Physician and Professor of Clinical Medicine in University College Hospital, in the room of Dr. Walshe.

Ryder, —, Esq., appointed Resident Surgeon of the Royal Kent Dispensary, Deptford.

South, John Flint, Esq., Surgeon of St. Thomas's Hospital, elected Vice-President of the Royal College of Surgeons of England.

OBITUARY.

Chapman, Sir John, F.R.C.S.Eng., aged 76, late of Windsor, on the 4th July.

Dyte, Maurice, Esq., Surgeon, of rapid consumption, in the 43rd year of his age, at 44, Houndsditch, on 12th July.

Lambert, George H., Esq., Licentiate of the Apothecary Society, aged 47, at his house, 105, Albany street, Regent's Park, on the 19th June.

Lerew, F. H., Esq., Surgeon, in the 33rd year of his age, at 54, Portman Place, Maida Hill, on the 13th July.

M'Alpin, C. C., Esq., Student of Medicine, aged 16, son of the late Rev. George M'Alpin, some time missionary in Russian Tartary, at Edinburgh, on the 26th June.

Mackellar, Dugald, M.D., formerly of Battersea, Surrey, at Funchal, Madeira, on 5th June.

Pearson, Sir William Hyde, M.D., F.R.S., aged 66, in Albemarle street, on the 10th July.

Scratchley, James, M.D., aged 65, late of the Royal Artillery, and Fellow of the Royal College of Surgeons of England, at Paris, of cholera (after a few hours' illness), on the 15th June.

Shadwell, John, M.D., Lord of the Manor of Horfield, near Bristol, aged 90, on 6th July.

Thomson, Anthony Todd, M.D., F.R.C.P., Professor of Materia Medica and Medical Jurisprudence in University College, London, at Ealing Common, on the 3rd July. An interesting memoir of this distinguished and most estimable man has appeared in a recent number of the *Medical Times*.

Thorp, Robert Disney, M.D., late of Leeds, aged 82, at the Rectory, Kemerton, the residence of his son, the Archdeacon of Bristol, on the 1st July.

BOOKS RECEIVED.

Catton (Dr.), Lectures on Phthisis. London: 1849. Clay on Ovariotomy. Manchester: 1848. Conolly (Dr. J.), Remonstrance concerning the Case of Miss Nottidge. London: 1849. Crummy, Contributions to the Practice of Medicine. London: 1849. De Jongh on Cod-liver Oil. By Carey. London: 1849. Dendy on Diseases of the Scalp. *Plates*. London: 1849. Gairdner on Gout. London: 1849. Nasmyth on the Teeth. London: 1849. Parkes' Inquiry into Causes of Cholera. London: 1849. Rees on the Treatment of Rheumatism by Lemon Juice. London: 1849. Smith on Fruits and Farinacea. Second Edition. London: 1849. Symonds' Life of J. C. Prichard, M.D., etc. London: 1849. Transactions of Provincial Medical Association, 1849.

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ORIGINAL COMMUNICATIONS.

STATISTICAL ANALYSIS OF 166 CASES OF SECONDARY SYPHILIS, OBSERVED AT THE LOCK HOSPITAL IN THE YEARS 1838-39, WITH OBSERVATIONS.

By HENRY LEE, Esq., F.R.C.S.Eng., Assistant Surgeon to King's College, and the Lock Hospitals.

In Medical Statistics, it frequently happens that favourable results are displayed, whilst others are passed over in silence; false impressions may thus be conveyed, even though the facts published be true. The accuracy of statistical conclusions in medicine may consequently be frequently doubted, especially when it is against the interest both of the patients and of the surgeons, that unsuccessful cases should be recorded. Especially with regard to the treatment of disease, are we bound to look with some degree of suspicion upon statistical evidence; for, although the favourable cases may be fairly enough stated, it can hardly be expected that large numbers of unsuccessful cases, particularly when they have to be collected from different sources, and when the stimulus of success is wanting to fix them upon the attention, can be brought forward with the same degree of prominence or fidelity. Valuable, then, as such evidence must always be, and necessary as an appeal to it is in all disputed questions, there must still be a doubt with regard to the conclusions drawn from it, when derived only from successful results. In the accompanying tables, a different plan has been followed, and one which is not liable to these objections. It has been my endeavour to investigate certain points connected with the history of Syphilis, from those cases only where the treatment of the primary affection had not been successful in preventing secondary disease. For this purpose, I have collected, and noted, as accurately as circumstances would permit, all the cases of Secondary affection which presented themselves at the Lock Hospital during the greater portions of the years 1838-39. By analyzing these cases, and observing the different probable causes of failure in the treatment of the primary affection, and the relative frequency with which particular symptoms followed the mercurial or the

non-mercurial plan of treatment, some important practical results may, I think, be deduced.

If it can be shewn, that after a disease has been treated according to a certain plan, any symptom, or set of symptoms, which naturally may be expected, does not make its appearance, or only does so in a small proportion of cases, we may with tolerable certainty conclude that the course of the disease is influenced by the treatment. If, for example, in the present day, it should be found, that out of 100 patients presenting themselves with small-pox, a very small proportion only had ever been vaccinated, this negative evidence in favour of vaccination would carry with it as much weight as would attach itself to the histories of a hundred cases of vaccinated persons, in whom a very large proportion subsequently remained free from the disease. It is upon this kind of negative evidence that some of the following conclusions are based; and if the facts have been accurately recorded, they must, I think, be regarded as at least of equal value with those which have been derived from the more direct evidence of the successful issue of particular cases. I have only further to premise, that the accompanying cases were noted without any particular preconceived opinions on the points which they tend to establish, and are preserved in order to attest the accuracy of the conclusions which have been deduced from them.

In analyzing the results of the mercurial and the non-mercurial plans of treatment, it is requisite to compare similar classes of cases with each other.

For this purpose, the cases have been divided, in Table II, into those which presented characteristic induration, and those in which this was not observed; and each class is again subdivided into those where the primary affection was treated by mercury, and those in which it was not so treated. A comparative view is given of the results of cases where the primary ulcer was accompanied by induration, according as it was treated with and without mercury; and a similar subdivision is observed in giving the numerical proportion, in which particular symptoms were observed to accompany, or to follow, primary ulcers where specific induration was not observed. The comparative results deduced from this table are confined to the cases which presented themselves in male patients, as in these the different primary affections may be classed with greater certainty, and the histories of the disease may be obtained with greater accuracy than in females. Similar results are afforded by taking the whole number of cases together; but the numerical proportions, given with reference to the men only, I believe to be the most accurate, and I shall therefore confine myself to these in the following observations.

In comparing together the cases of ulcer accompanied by induration, we find that the existence of bubo is recorded in the proportion of 61 per cent. where the primary affection was treated with mercury, and in 41 per cent. where this medicine was not used; and that on the other hand, the absence of bubo is noted in the proportion of 35 per cent. in the former, and of 53 per cent. in the latter class. The conclusion, which necessarily follows this comparison, is, that where mercury is given ineffectually, so as not to eradicate the disease from the system, it encourages the formation of bubo. The same medicine which

promotes the absorption of the specific induration, is seen thus to favour the transmission of the virus along the course of the absorbents. The object of the effusion of lymph around the sore, and its mode of treatment, then become of practical interest with regard to the absorption of the venereal poison; and what is observed with respect to it, I believe to be perfectly in accordance with what takes place in other parts of the body. When effusion of lymph circumscribes a wound upon the hand, it is well known how seldom the absorbents become inflamed; and, on the contrary, how frequently this happens when the healthy effusion of lymph is wanting, and diffuse cellular inflammation occurs. I conclude, then, that the effusion of lymph around venereal sores, is an attempt of nature to limit the progress of the disease, and that when it is prevented, or does not occur, the poison finds a more ready course along the absorbents than under other circumstances. In support of this view, it is shewn in Table II, that the absence of bubo is recorded in the proportion of 53 per cent. in cases of indurated sores treated without mercury, and in the proportion of 26 per cent. only, under the same mode of treatment, where the sores were not accompanied by induration. The table presents one apparent exception to these conclusions in the fourth series; but this depends upon the number of cases of sloughing sores which are included in it. The sloughing of the parts, when it occurs, appears to prevent the virus finding its way along the absorbents, even more effectually than the effusion of lymph does in other cases; and hence it is, that unindurated sores treated with mercury, shew a comparatively small number of accompanying affections of the inguinal glands.

The circumstances which favour the effusion of lymph around venereal sores, are the same as those which most frequently accompany the papular eruption. The proportion in which this form of eruption was noted, after indurated sores, when not influenced by treatment, was 47 per cent.; whereas it occurred in the proportion of about 17 per cent. only after ulcers, in which no induration was observed. The effect of mercury in influencing the form of secondary symptoms, which appear after a primary ulcer, is also indicated in a very marked manner with regard to this kind of eruption. The papular eruption is shewn not to follow in half the number of cases where indurated sores have been treated by mercury, as when that medicine has not been employed.

The comparative frequency with which the different forms of eruption make their appearance may thus be generally stated:—The papular and scaly are observed in a greater relative proportion of cases after the treatment of the primary affections by local means; the pustular and tubercular after the administration of mercury. That the kind of eruption which appears, follows some very definite and predetermined law, has long been suspected, although pathological researches have hitherto failed to determine, with any degree of precision, the circumstances by which it is influenced. The following very unexpected result clearly points to the existence of such a law, although it perhaps does little to remove the mystery in which it is involved. It will be seen, by reference to the line containing the indurated sores, which were treated by mercury, that the papular eruption bears the same relative proportion to the pustular, that the scaly does to the tubercular.

The regularity with which the numbers present themselves, is such, that if any three of them are given, the common rule of three would indicate the fourth with considerable accuracy. The following proportions will shew how closely the result given by actual observation, accords with that which would be afforded by calculation:

Papular.	Scaly.	Pustular.	Tubercular. By Observation.	Tubercular. By Calculation.
7 :	4 : :	11 :	6	6·28

The ingenious hypothesis maintained by some surgeons of eminence, that the kind of primary ulcer influences the secondary eruption, must be allowed to have been founded upon observation, however numerous the exceptions, and however medical men may differ with regard to its explanation. The facts mentioned above, shew that such a connexion does exist between particular kinds of ulcers and particular secondary symptoms, but they unequivocally point to these as being common effects of the same causes. They shew that the same condition of system which readily generates the lymph which circumscribes a chancre, will readily produce the lymph which forms the pimple of the secondary affection. They also shew that the mode of treatment of the primary affection has a most marked effect upon the form in which constitutional Syphilis presents itself; and it may be easily imagined, that a surgeon who is in the habit of treating some descriptions of sores in a particular way, may be himself the means of favouring the production of the very kind of eruption which he records as the consequence of the primary disease.

In the conclusions drawn from the accompanying table, with respect to the action of mercury, it is necessary to bear in mind, that they are composed exclusively of cases in which the treatment did not prevent the system from becoming contaminated by the disease; and we find, that under these circumstances, not only does the mercury produce an injurious effect upon the constitution, but it also acts injuriously upon the local disease. Taking the average length of time in which the primary affections healed, as they are recorded in the first table, we find the result to be in favour of the non-mercurial plan of treatment. We may thus trace the injurious effects of mercury, when given ineffectually, through every stage of the disease; and the great question, therefore, presses itself upon our attention, how are we to know whether mercury is likely to produce its beneficial, or its injurious, results? When may we expect it to act as a remedy for the disease, and when as a poison in the system?

The following are some of the principal circumstances which occurred during the treatment of the primary affections, and, I conceive, prevented the mercury from producing its legitimate action upon the system and the disease:

In 32 out of 166 cases, three weeks was the longest period that the mercury was continued.

In 19 cases, it did not produce a decided effect upon the system.

In 11 cases, its effect was either violent or greater than desirable.

In 4 cases, the patients were exposed to alterations of temperature, or to cold air, during the time of taking the mercury.

In 2 cases, the bowels were much deranged during its administration.

In 3 cases, the mercurial course was intermitted.

In 10 cases, the mercury was taken irregularly.

In 7 cases, the mercury was commenced a considerable time after the first appearance of the disease.

In 1 case, the venereal eruption made its appearance three weeks after the commencement of the mercurial course, and the venereal action must, therefore, have commenced in the system before the effect of the mercury was established.

These cases, added to 75, in which no mercury was administered for the primary disease, leave only two out of the whole number of cases in which the principal cause of failure in the treatment of the primary affection may not be pointed out; and even in these two cases, the evidence, with regard to proper mercurial treatment, is not very satisfactory: in one, the patient stated, that he had taken four pills daily for four months; and in the other, eight months had elapsed between the period of the patient's taking mercury and his admission into the Hospital.

When, in such a number of consecutive cases, we find so small a proportion that had been subject to proper mercurial treatment, we are, I think, justified in concluding, that after such treatment the persistence of the disease is seldom met with; and the general principle may, I believe, be maintained, that where a mild mercurial action has been continued for about four weeks, shortly after the appearance of the disease, and has not been interfered with by any of the causes above enumerated, the instances in which secondary symptoms will follow, are very rare. Exceptions to this rule will occasionally present themselves; but so long as causes can be assigned for such exceptions, they rather tend to maintain than to invalidate the principle. The most frequent cause of failure in the administration of mercury for the cure of the venereal disease, next to its being sustained an inadequate length of time, is probably the want of proper regulation with regard to its effect. The quantity given, and not its effect upon the system, are made not uncommonly the criterion of its intended action.

Mr. Pearson[1] gives, as the result of his experience, drawn from not less than twenty thousand cases, that mercury may safely be confided in for the cure of the venereal disease, when we have that disease only to contend with; and it is not a little gratifying to me to find the negative evidence, drawn from the statistics which are now brought forward, supported and confirmed by such an authority. The conclusion at which I have arrived, from all the points that have been adduced, is, that where mercury is inefficiently given, or when its action is not properly regulated, it acts prejudicially; but under other circumstances, it may be relied upon for the cure of Syphilis.

[1] Observations on the Lues Venerea, p. 99.

TABLE I. VIEW OF 166 CASES OF SECONDARY SYPHILIS OBSERVED AT THE LOCK HOSPITAL, DURING THE YEARS 1838-39.

Sex. Age.	Primary affection.	Bubo.	Took Mercury.	Commenced mercury.	Mouth affected.	Primary sore healed.	Appearance of secondary symptoms.	Secondary symptoms.
1 M. 28	Excavated sores on glans and prepuce, that on the glans indurated; had bubo.	Yes.	Pil. hydr. gr. v, bis die for 7 weeks, during which he was at work.	1 month.[1]	1 week.	7 weeks.[1]	3 months[1]	Sore throat; eruption, partly tubercular and partly pustular.
2 M. 21	Circular sore, with indurated base, leaving an indurated cicatrix.	..	For 3 months.	3 months.	10 weeks; profusely.	6 months.	27 weeks.	Mottled skin; sore throat; general debility.
3 M. 30	Slight ulcer on the prepuce.	..	For sec. affect. 2 pills daily for 3 mths.	12 months.	....	3 months.	12 months.	Exfoliation of vomer; ulceration of the posterior arch of the palate.
4 M. 20	Phagedenic ulceration of frænum; several small circular ulcers, filled with yellow slough, on glans.	No.	Two weeks and 5 weeks, with 3 weeks interval.	2 weeks.	3 weeks.	10 weeks.	3 months.	Scaly eruption on bend of elbows; mulberry coloured eruption on the inside of the thigh; excavated ulcers on the tonsils; mottled skin.
5 M. 29	Sore, destroying the frænum.	..	Pil. hydr. gr. v, for 6 weeks.	1 week.	No.	3½ weeks.	8 months.	Iritis; eruption of ulcerated tubercle.
6 M. 24	Ulcerated bubo; no history of sore or discharge.	Yes.	Twenty-four pills.	....	Yes.	....	5 months.	General eruption of papulæ; iritis.
7 M. 34	Phimosis; discharge; small sore near frænum.	..	For 3 weeks.	At once.	Yes.	3 weeks.	4 months.	Eruption—at first tubercular, subsequently pustular; iritis.
8 F. 19	Circular indurated sore; discharge; condylomata.	No.	Not for primary affection.	6 weeks.	....	....	6 weeks.	Scaly eruption, slightly raised and flat; sore throat.
9 M. 22	Sore near frænum, leaving slightly indurated cicatrix.	Yes.	Took pills (mercurial?) for 6 weeks. Caught cold while taking them.	1 week.	Slightly.	3 weeks.	5 months.	Papular eruption; sore throat. The eruption recurred occasionally in a few scattered spots till the year 1844.
10 F. 28	Extensive ulceration of inner surface of both labia, surrounded by much induration.	No.	For secondary affection.	3 months.	Slightly.	Not when she left.	3 months.	Desquamating tubercular eruption on head, body, and limbs.
11 F. 18	Ulcerated condylomata on the opposed surfaces of both la-	..	None.	....	....	....	2 months.	Pustular eruption on abdomen; ulcerated tonsils.

12 F. 26	Uneven circular superficial sore.	Yes.	None for primary affection.	13 weeks.	Yes.	....	9 weeks.	Ulcerated tonsils; tubercular eruption.
13 F. 19	Ulcerated condylomata: extensive ulceration of perinæum.	..	None for primary affection.	11 weeks.	Slightly.	....	11 weeks.	Ulcerated tonsils, with ash-coloured surface.
14 F. 25	Ulceration of inferior commissure and perinæum.	..	None for primary affection.	1 month.	Slightly.	....	4 weeks.	Eruption of lichen; succeeded first by a pustular, and subsequently by a tubercular eruption; iritis.
15 M. 25	Large florid sore, extending from dorsum of penis to frænum.	Yes.	None for primary affection.	11 weeks.	Very slightly.	14 weeks.	2 months.	Eruption of small desquamating tubercle; ulcerated tonsils. Eruption and ulceration of tonsils recurred after using mercurial inunction for a month.
16 M. 24	Circular greatly indurated sore, surrounding the orifice of the prepuce.	No.	None for primary affection.	15 weeks.	Yes.	....	15 weeks.	Excavated ulcer, coated with lymph, upon each tonsil; scaly, flat eruption, slightly elevated.
17 M. 24	Sore, destroying portion of glans penis. Had disease before.	Yes.	Two weeks.	At first.	Yes.	....	3 months.	Phagedenic ulceration of tonsils.
18 M. 40	Indurated sore on inner surface of prepuce.	No.	One month. Was exposed to cold while taking the mercury.	At first.	Yes.	6 weeks.	9 weeks.	Pains in limbs; exfoliation of portion of os frontis.
19 M. 20	Indurated sore near the frænum. (Strumous constitution.)	No.	No.	....	....	4 months.	2 months.	Papular eruption on face; pustular eruption on back and body.
20 M. 18	Large oval sore, with florid surface and indurated base.	Yes.	One or two pills daily for 7 weeks.	2 weeks.	No.	6 weeks.	13 weeks.	Mottled skin; scaly eruption upon body; ulceration of right tonsil.
21 M. 19	Small sore on fold of prepuce.	Yes.	Four pills daily for 4 months (mercurial?)	At first.	Yes.	....	10 weeks.	Spots of lepra on the abdomen and arms.
22 M. 16	Two indurated sores on inner surface of prepuce.	..	None for primary affection.	....	....	....	7 weeks.	Papular eruption; vascularity of fauces; right tonsil slightly ulcerated.
23 M. 32	Phimosis, with sloughing sore.	..	Three pills daily for 3 weeks. Before salivation occurred, bled for affection of liver.	2 weeks.	Very much.	11 week.	3 weeks.	Rupia.
24 F. 18	Irregular excavated sore, with thickened edges.	..	None for primary affection.	....	....	5½ months.	4 months.	Enlargement of right tonsil; excoriation of left. (Qy. Venereal?)
25 F. 20	Circular sore, with indurated base.	..	Eighteen pills in 2 weeks.	At first.	Yes.	....	6 weeks.	Right tonsil enlarged, presenting an excavated ulcer.
26 F. 19	Ulcer, accompanied by swelling and inflammation of labium.	..	Used mercurial friction for 4 weeks.	2 weeks.	....	7 weeks.	6 weeks.	Ulcerated tonsils; eruption on neck and body, chiefly papular, but in some places pustular. The papulæ appeared three weeks after commencing mercury.

[1] After the appearance of the Primary affection.

TABLE I, CONTINUED.

Sex.	Age.	Primary affection.	Bubo.	Took mercury.	Commenced mercury.	Mouth affected.	Primary sore healed.	Appearance of secondary symptoms.	Secondary symptoms.
27	M.	24	Small sores on prepuce, with ash-coloured surface; when healed, leaving some induration.	No.	None for primary affection.	....	....	3 weeks.	6 months.	Excavated ulcer on tonsils, with ash-coloured surface.
28	F.	18	Small circular indurated sore on left labium, with fawn-coloured surface.	Yes.	None for primary affection.	....	....	....	2 weeks?	Scaly and slightly raised circular eruption on various parts of the body. Had sore throat before the appearance of the present disease.
29	F.	19	Circular sore, with indurated base on left labium.	No.	None for primary affection.	....	....	....	5 weeks.	Scaly eruption, flat, circular, slightly raised, covering the whole body.
30	F.	17	Ulcer on the exterior of left labium, surrounded by considerable induration.	No.	None for primary affection.	....	....	....	6 weeks.	Papular eruption; sore throat.
31	M.	20	Ulcer on glans penis, spreading rapidly.	Yes.	Three pills daily for 8 days.	5 weeks.	Very much.	9 weeks.	4 months.	Sore throat; large rupial scabs.
32	M.	30	Ulcer destroying frænum, leaving indurated cicatrix.	No.	Took pills for 3 weeks.	2 weeks.	Slightly.	8 weeks.	10 weeks.	Excavated ulcer on each tonsil.
33	M.	23	Two ulcers on the prepuce, accompanied by surrounding induration.	Yes.	Uncertain whether any.	....	No.	2 months.	8 months.	Copper-coloured stains on various parts of the body, presenting a mealy scurf upon their surface.
34	M.	20	Phimosis; two sores upon the prepuce, appearing first as excoriations, subsequently becoming indurated.	Yes.	Took 20 different sorts of pills.	Probably 1 month.	For one month.	6 weeks.	13 weeks.	Scaly eruption, circular, slightly elevated, chiefly upon the face. It faded in two months, but subsequently returned.
35	M.	24	Superficial sores upon the under surface of prepuce.	Glands slightly enlarged.	None for primary affection.	....	....	....	6 months.	Excavated ulcer upon each tonsil.
36	M.	18	Large sore, with indurated base, clean surface, and florid red margin on external prepuce. The cicatrix was indurated when he discontinued the mercury.	Glands enlarged.	Pil. hydr. gr. v, bis vel ter die, from May 22 to July 10.	4 weeks.	Very slightly.	6 weeks.	12 weeks.	Scaly eruption on arms and hands; mottled skin; two circular spots of ulceration on right tonsil, with ash-coloured surface.
37	F.	22	Gonorrhœa; no history of sore; ulceration of upper part of vagina after appearance of	No.	None for primary affection.	....	....	....	1 month.	Papular eruption, in parts becoming tubercular, recurring after an interval; inflammation of the conjunctiva of each

38	F.	19	Raised florid sores, with indurated base, on opposite surfaces of both labia.	No.	None for primary affection.	....	....	....	5 months.	Eruption, chiefly on the shoulders and back; some spots having the appearance of lepra, others that of a central tubercle surrounded by papulæ; a spot of lepra on the left temple followed a slight injury. Tonsils enlarged and superficially ulcerated.
39	F.	35	Two sores upon the labia.	..	Pills for 2 weeks, and again for 3 or 4 weeks; fumigation.	....	Twice.	3 months.	3 months.	Sore throat; tubercular eruption; rupial scabs.
40	F.	27	Sore on inferior portion of left labium.	..	Three pills daily for 1 week.	....	....	....	7 months.	Pains in the joints and bones; rupial scabs. (Sight of one eye was destroyed by old inflammation.)
41	F.	30	No history of primary affection.	After eruption appeared.	For many months for secondary affection.	....	Very much.	....	....	Florid tubercular eruption, with shining scales, having a tendency to form in circles.
42	F.	19	Gonorrhœa; ragged sore between labium and thigh.	No.	None for primary affection.	For sec. symptoms.	Yes.	....	7 weeks.	Papular eruption, recurring at the end of five weeks.
43	F.	20	Superficial sores; gonorrhœa.	Ulcerated.	Hydr. bichlorid, gr. $\frac{1}{8}$ ter die, for 5 weeks.	....	....	....	3 months.	Syphilitic paronychia.
44	F.	23	Gonorrhœa; no history of any sore.	..	None for primary affection.	For sec. symptoms.	....	....	3 months.	Sore throat; tubercular eruption; tenderness of the tibia and humerus.
45	M.	22	Sore on frænum, having a pea-like induration.	Slightly enlarged gland.	None for primary affection.	For secondary affection.	1 month.	2 months.	5 months.	Sore throat; mottled skin; scaly eruption on arms. Got well without medicine after admission into hospital.
46	M.	23	Sore destroying frænum.	Ulcerated.	A week for primary symptoms; irregularly afterwards.	Directly.	Slightly at first.	3 weeks.	4 months.	Much vascularity of fauces; deep ulcer on left tonsil, with phagedenic surface. Tubercular eruption; some of the spots suppurating, others presenting scales upon their surface.
47	M.	25	No history of primary sore.	No.	Two pills night and morning for 5 weeks 9 months before admission.	For sore throat.	Teeth loose.	....	....	Destruction of soft palate, leaving exposed the inferior surface of the palate bones. Became rapidly worse after taking the mercury.
48	F.	24	No history of primary sore.	Yes.	None for primary affection.	....	....	....	3 months after bubo.	Left tonsil ulcerated; mottled skin.
49	F.	16	Gonorrhœa; condylomata.	Yes.	No.	....	No.	....	8 months.	Desquamating tubercles on chest, back, and shoulders.
50	F.	24	No history of sore.	Yes.	No.	....	No.	....	2 months.	Scaly eruption.
51	M.	25	Sore on prepuce, having induration the size of a large pea.	Very slight.	Two pills each night for 2 or 3 weeks.	3 months.	Very much.	14 weeks.	15 weeks.	Psoriasis of the throat: mottled skin; scaly eruption, slightly raised.

TABLE I, CONTINUED.

No.	Sex.	Age.	Primary affection.	Bubo.	Took mercury.	Commenced mercury.	Mouth affected.	Primary sore healed	Appearance of secondary symptoms.	Secondary symptoms.
52	F.	17	Sore with considerable induration on nympha.	No.	None for primary affection.	....	....	....	1 month.	Scaly eruption; enlargement and scaled ulcer of tonsil.
53	M.	24	Sore without any induration on prepuce.	No.	Three pills daily for 6 weeks.	2 days.	Very slightly.	5 weeks.	3 months.	Red circular copper-coloured spots, more raised in centre than at the circumference, terminating in desquamation, and disappearing spontaneously. Excavated ulcer on tonsil.
54	F.	17	No history of primary affection.	No.	No.	....	No.	....	....	Small circular patches of eruption, resembling desquamated tubercles; those situated on the elbows and knees presenting more the character of lepra.
55	F.	18	Small circular indurated sore on left labium, with fawn coloured surface.	Slight.	None for primary affection.	4 weeks.	....	6 weeks.	2 weeks?	Scaly eruption, slightly raised, on various parts of the body. There was a cicatrix on the tonsil.
56	M.	25	Small sore on frænum.	Yes.	One, two, or three pills daily for two months.	6 weeks.	Kept sore.	8 weeks.	11 weeks.	Excavated ulcer on tonsil; numerous small aphthous spots on soft palate. Rupial spots on forehead. Was greatly debilitated.
57	M.	22	Sore on frænum.	..	Took pills and used ointment two weeks.	At first.	For 4 weeks.	3 weeks.	18 months.	Successive crops of pustular eruption on body, limbs, and face. Patient was of a strumous constitution.
58	F.	28	Discharge; ulcerated condylomata.	Yes.	None for primary.	For sec. affection.	....	....	4 months.	Scaly circular eruption, slightly elevated, covering the whole body.
59	F.	20	Sore on inferior commissure.	..	Seven pills.	4 weeks.	Slightly.	1 month.	6 weeks.	Enlargement of tonsil; mottled skin; pains in joints.
60	M.	21	Sore, leaving indurated cicatrix on skin of penis.	Yes.	Three pills daily for ten weeks (missed a few days). At work during treatment.	Immediately	Very slightly.	8 or 10 wks.	14 weeks.	Papular eruption; ulcerated tonsils.
61	M.	21	Sore, leaving induration on skin of penis.	Yes.	One or 2 pills daily for 7 weeks (rather irregularly). At work during treatment.	3 weeks.	Yes.	6 weeks.	5 weeks.	Excavated ulcer on tonsil; pustular eruption on back and arms; some spots, tubercular and desquamating.
62	M.	48	Sore on skin of penis, leaving	No.	Two pills every night	2 weeks.	Violently.	6 weeks.	6 weeks.	Pustular eruption on face, chest, and shoulders, leaving copper coloured stains

63	F.	19	Sore, surrounded by induration, extending through left nympha.	Yes.	Pil. Hydr. gr. iij. bis die, for one week.	2 weeks.	Slightly.	....	6 weeks.	Scaly eruption on face; papular on shoulders.
64	F.	20	Indurated sore.	No.	One week.	3 weeks.	Slightly.	5 weeks.	3 weeks.	Ulcerated tonsils; copper-coloured desquamating eruption on shoulders.
65	M.	26	Sore, leaving an indurated and elevated margin.	No.	Two or three pills daily for three weeks.	3 or 4 days.	For 2 weeks.	3 weeks.	5 weeks.	Scaly elevated eruption.
66	M.	34	Sloughing sore, destroying glans penis.	..	Occasionally for 10 months, but not for longer than 3 weeks at a time.	Shortly after appearance of sore.	Once, not much.	....	4 months.	Sloughing of the throat, which destroyed the arches of the palate, and extended to the back of the pharynx. The sore contracted in the process of healing, so as to render deglutition extremely difficult.
67	M.	26	Two sores, leaving induration in substance of penis behind the glans.	No.	A few pills.	At first.	No.	....	2 months.	Eruption covering whole body; terminating in mealy desquamation, and of a brownish colour.
68	F.	18	Sore on labium (destroyed with caustic).	..	Pills for 17 days.	2 weeks.	Slightly.	3 weeks.	5 weeks.	A few copper-coloured spots; ulcer on tonsil, coated with layer of white lymph
69	F.	22	Gonorrhœa.	Yes.	No.	....	No.	....	1 month.	Papular eruption, leaving brown stains.
70	M.	19	No history of primary disease.	No.	No.	....	No.	....	....	Confluent slightly raised patches of eruption, circular and flat, and terminating in scabs, over whole body. When the first eruption disappeared, distinct papulæ made their appearance.
71	F.	28	Two sores, which healed in a fortnight.	No.	Three weeks.	Immediately.	Much.	2 weeks.	3 months.	Ulcerated tonsils; eruption covering body, partly papular, but for the most part larger, and desquamating upon the surface.
72	M.	27	Sore on prepuce, leaving indurated cicatrix.	Yes.	Two weeks. At work during the time.	2 weeks.	1 week.	3 weeks.	5 months.	Eruption, copper coloured, slightly elevated; numerous small elevated papillæ in some of the portions of discoloured skin.
73	M.	29	Indurated sore on prepuce.	Very slight.	Ten weeks. At work during the time.	2 months.	Much.	4 months.	4 months.	Scaly eruption; ulcerated tonsils.
74	M.	19	Phimosis; much induration in fold of prepuce.	No.	None for primary affection.	....	No.	....	3 months.	Desquamating papular eruption, covering the whole body.
75	F.	25	Sore on labium, producing painful swelling.	Very slight.	None for primary affection.	3 weeks.	....	....	4 weeks.	Scattered scaly eruption, slightly elevated, some spots suppurating.
76	M.	26	Sore, accompanied with considerable induration, producing phimosis.	Slight.	One or 2 pills daily for three weeks.	7 weeks.	Considerably.	....	....	Papular eruption; ulceration between the toes.

TABLE I, CONTINUED.

Sex.	Age.	Primary affection.	Bubo.	Took mercury.	Commenced mercury.	Mouth affected.	Primary sore healed.	Appearance of secondary symptoms.	Secondary symptoms.
77 M.	21	Sore, leaving indurated cicatrix.	No.	One pill night and morning for 2 weeks.	Immediately.	....	3 months.	2 weeks, or 9½ months.	Papular eruption in clusters, with a few tubercles.
78 M.	33	Circular sore, leaving slight induration for three years.	No.	Several times; five weeks at first.	2 weeks.	Several times.	5 weeks.	2½ months.	Tubercular eruption; ulceration of throat: nodes on tibia.
79 M.	41	Discharge from urethra. No history of primary sore.	Yes.	Took pills irregularly.	1 week.	Teeth loose 3 weeks.	(Discharge ceased) 8 months.	10 months.	Irregular patch of scaly eruption on leg; sore throat.
80 M.	42	Sore behind corona glandis, reported without induration.	No.	Pills for 3 weeks, night and morning.	6 weeks.	Not at all.	2 months.	1 or 6 mnths.	Scaly eruption.
81 M.	35	Extensive ulceration around corona glandis, with much swelling of prepuce.	No.	A great deal for 3 weeks. At work during this time.	3 weeks.	Not at all.	....	6 months.	Scaly eruption on arm, followed by eruption of pimples on face.
82 M.	25	Sore on penis, leaving indurated cicatrix.	Slight.	For three weeks.	1 month.	Not at all.	7 weeks.	10 weeks.	Eruption, terminating in unhealthy spots of ulceration.
83 M.	23	Sore behind corona glandis, circular, and accompanied by defined induration.	Yes.	None for primary affection.	....	....	....	11 days.	Ulceration of tonsils; papular eruption covering whole body; some spots shewing a tendency to desquamate.
84 M.	22	Slight excoriation on prepuce. No other history of primary affection.	Suppurating in both groins.	One pill every night for a week.	1 week before admission.	Gums ulcerated.	....	....	Eruption of scattered papulæ, some of which have terminated in ulceration; ash-coloured slough, with much vascularity of tonsils.
85 F.	28	Small healing sore on left labium. No history.	....	....	....	....	....	....	Vascularity and superficial ulceration of throat; scaly eruption on arms and chest.
86 F.	17	Discharge; no distinct history of sore.	Yes.	None before admission into hospital.	....	....	....	3 months.	Ulceration of tonsils, and redness of the arch of the palate; eruption, principally upon the face. Improved rapidly under mercury.
87 F.	19	Sore, reported indurated.	Yes.	None for primary affection.	....	....	3 weeks.	2 months.	Circular, scaly, elevated eruption, followed seven months afterwards by spots of ulceration upon different parts; ulceration through the septum of the nose. Took two powders, which salivated her.
88 M.	24	Sore, with circular induration in the situation of the frænum.	....	During five or six weeks. Much exposed to weather, do-	2 months.	....	Ulcerated again, with	6 months.	Desquamating eruption; ulcer on right tonsil.

89	M.	19	Phimosis; ulceration of prepuce.	Very slight.	Not three weeks.	2 weeks.	Yes.	1 month	6 months.	Scattered papular eruption; extensive ulceration of throat. (Fresh infection two months after the first.)
90	M.	21	Small sore, not attended with or leaving any characteristic induration.	No.	None.	....	No.	....	3½ months.	Flat circular patches of shining red elevated eruption; enlargement and ulceration of tonsils.
91	M.	25	Sore behind glans, leaving sore induration in cicatrix.	In both groins.	Three pills daily for 3 weeks. At work while taking mercury.	2 weeks.	Very much.	7 weeks.	3 months.	Three or four copper-coloured spots on head; enlargement and ulceration of tonsils; severe pain in joints.
92	M.	22	Large livid sore, with much induration, terminating abruptly.	Yes.	None for primary affection.	....	No	....	3 months.	Copper-coloured spots covering body.
93	F.	14	Sore on left labium, much inflamed and sloughing.	Very slight.	Probably for 3 wks. At usual occupation during the time.	3 weeks.	Yes.	....	2 months.	Circular, scaly, elevated eruption; enlargement and phagedenic ulceration of tonsils.
94	F.	18	Discharge; warts; extensive excoriation.	Yes.	None.	....	No.	....	5 weeks	Circular scaly eruption; lichen.
95	F.	18	No history of primary sore.	Yes.	None.	....	....	....	....	Successive crops of flat circular slightly elevated eruption.
96	M.	19	Sore, leaving indurated and irritable cicatrix.	Yes.	Hydr. c. cretâ gr ij. o.n. for 2 weeks for secondary symptoms.	10 weeks.	No, or very slightly.	2 months.	10 weeks.	Clustered papulæ, very slightly raised, giving the skin a mottled appearance; enlargement of tonsils; pains in limbs.
97	M.	41	Ulcer destroying anterior part of glans penis, surrounded by much induration during the period of healing.	Yes.	A few pills irregularly.	....	No.	....	1 month.	Copper-coloured spots, scattered irregularly over body; circular, slightly elevated, on forehead. Surface of skin felt as if sprinkled over with sand.
98	M.	20	Sore, which healed in 3 weeks.	..	Rubbed in 5 weeks.	At first.	Violently.	3 weeks.	2 months.	Sloughing throat (effect of mercury?).
99	M.	28	Fissured sores on extremity of prepuce.	....	None.	....	No.	2 months.	6 months.	Flat circular patches of shining scaly elevated eruption on body.
100	M.	19	Sore, involving anterior aperture of prepuce, and corresponding portion of glans penis, accompanied by considerable swelling, but with much induration.	No.	None.	....	....	....	3 or 6 weeks.	Desquamating papular eruption.
101	F.	20	Sore on inner side of left labium.	....	No.	....	No.	....	6 weeks.	Eruption, partly papular, partly scaly, the latter flat, circular, slightly elevated.
102	M.	30	Sore on penis.	No.	Six weeks.	Directly.	No.	4 weeks.	4 months.	Desquamation of cuticle on hands and feet, with small very painful fissures.
103	M.	17	Sore on outer surface of prepuce, leaving very slight flat and superficial induration.	Yes.	None for primary affection.	.....	.....	7 weeks.	7 or 8 weeks	Faint patches of scaly eruption; irregular, but assuming a somewhat circular form; disappeared spontaneously.

TABLE I. CONTINUED.

Sex.	Age.	Primary affection.	Bubo.	Took mercury.	Commenced mercury.	Mouth affected	Primary sore healed.	Appearance of secondary symptoms.	Secondary symptoms.
104	M. 28	Sore in depression behind glans penis, leaving induration after a course of mercury. (Had lived very hard.)	Yes.	Pil. hydr. gr. v, bis die, from Dec. 1st to Feb. 12th.	6 weeks.	6 weeks.	10 weeks.	5 months.	Papular eruption on body, subsequently becoming tubercular; sloughing ulcer of throat.
105	F. 21	Irregular painful ulceration, with red surface & abrupt edges.	Slight.	None for primary affection.	....	....	....	6 weeks.	Spots of scaly eruption on face; sore throat.
106	M. 20	Gonorrhœa; verrucæ; phimosis.	No.	Two grs. of hydr. oxym. a day, for one week.	7 weeks.	No.	....	6 weeks.	Eruption covering body; the apices of some spots containing lymph or pus, others desquamating.
107	M. 43	Sore, with glazed surface, destroying extensively the lower part of the prepuce, without any characteristic induration.	..	None.	....	No.	6 weeks.	....	Brown circular elevated patches of scaly eruption; disappeared spontaneously in six weeks.
108	F. 19	Circular sore on right labium.	Yes.	None for primary affection.	....	No.	....	9 weeks.	Circular scattered spots of scaly eruption: surface of both tonsils ulcerated, presenting a white appearance.
109	F. 16	Sore, with swelling of labia.	Yes.	None for primary affection.	7 weeks.	No.	6 weeks.	6 weeks.	Circular spots of brown scaly eruption; flat ulcer in the throat, with clean and rounded edges.
110	F. 24	Sore upon labium.	No.	Probably considerable quantity at various times.	3 months.	3 or 4 times.	3 weeks.	3 months.	Sore throat; followed by affection of the bones of the nose. The septum, turbinated bones, and nasal bones, became denuded.
111	F. 20	Sore in vestibulum.	Yes.	None for primary affection.	9 months.	....	3 weeks.	9 months?	Successive crops of eruption, leaving brown stains; affection of the eyes; dimness of sight.
112	M. 30	Sore on skin of penis. (Had the disease before)	Yes.	None.	....	No.	2 months.	4 months.	Desquamating papular eruption.
113	M. 20	Sore on lower part of prepuce (to which caustic had been applied), surrounded by general induration.	Yes.	Took a pill night and morning for one month.	3 months.	....	6 months.	6 months.	Faint copper-coloured circular spots.
114	F. 25	Sore on the external part of the labium, leaving indurated cicatrix.	Yes.	For two weeks, and afterwards for different periods.	....	For 1 week.	About 6 weeks.	6 months.	Patches of circular scaly eruption, extending towards the circumference, and leaving the skin of its natural colour in the centre.

115	F.	21	.. .. ..	..	Took pills for three weeks.	....	....	....	....	Eruption at three different periods; ulceration of tonsils and iritis.
116	F.	15	Discharge; no history of sore. Inoculation from bubo produced pustules on both thighs. The cicatrices on the thighs presented deep stains, with some induration, when she discontinued taking mercury.	Ulcerated.	Rubbed in ung. hydr ℈i every night, from June 14 to July 12.	Ten days after inoculation.	Slightly.	Bubo healed in 6 weeks.	5 months.	Eruption (pustular) covering the body, disappearing spontaneously in six weeks; reappearing again in a month, and leaving copper-coloured stains, not disappearing upon pressure a year after the commencement of the disease.
117	F.	18	Sore within labia, remaining six months during pregnancy.	Yes.	Irregularly three weeks for primary affection. Rubbed in for two months for secondary.	For secondary sympts. 3 mnths. after their appearance.	Very slightly.	6 months.	6 months.	Pustular eruption, leaving pits with deep stains, not disappearing upon pressure; some spots tubercular, with shining and scaly surface. Her child had eruption, resembling that of the mother.
118	F.	19	Sore upon labium	..	Yes.	Immediately.	Very much. 4 weeks at first and 3 different times afterwards.	3 weeks.	Shortly after primary.	Rupia on back and legs.
119	F.	17	Sore.	Yes.	Pills for three weeks.	3 months for sec. affection.	Yes.	3 weeks.	3 months.	Eruption of lichen on body and legs; brown stains on abdomen.
120	F.	20	No history of primary affection.	Not before appear. of 2nd sympt.	No.	..	No.	..	..	Successive crops of eruption, leaving stains at the expiration of four years.
121	F.	25	Two sores on perinæum, with well defined margins.	..	Denies having taken mercury.	For sec. affection.	Apparently.	..	5 weeks.	Scaly eruption; mottled skin.
122	F.	20	Sore on labium; discharge.	..	One pill daily for ten days.	At first.	No.	3 weeks.	3 months.	Deep ulcer on each tonsil; eruption covering body, in some places papular, in others terminating in unhealthy spots of ulceration: (scrofulous swellings in the neck.)
123	F.	18	No history of sore, but ulcer discovered on os uteri.	No.	For secondary symptoms.	Ten days after secondary affection.	..	..	..	Severe febrile attack, succeeded in about ten days by a scaly, slightly tubercular, copper coloured eruption; tonsils enlarged.
124	F.	17	Sore, leaving indurated cicatrix at expiration of six months.	..	15 days at first; 6 wks. at end of 4 mths.	At first.	Slightly.	6 months.	?	Papular eruption, reappearing; emaciation; pains in limbs.
125	F.	22	Sore on labium.	Yes	No.	..	No.	4 weeks.	?	Chapped and dry condition of the skin of hands and feet; epithelium peeled off tongue; vascularity and superficial ulceration of throat; some eruption on skin; condylomatous looking excrescences in axilla.

TABLE I, CONTINUED.

	Sex.	Age.	Primary affection.	Bubo.	Took mercury.	Commenced mercury.	Mouth affected.	Primary sore healed.	Appearance of secondary symptoms.	Secondary symptoms.
126	M.	19	Sore on anterior parts of glans penis, without much induration.	Yes.	For secondary affection.	9 weeks.	Yes.	3 months.	7 weeks.	Vascularity of tonsils; mottled skin.
127	M.	25	Gonorrhœa; phimosis.	No.	.. ..	..	..	..	5 weeks.	Eruption, confined to upper part of left thigh, consisting of thickly-studded desquamating papulæ.
128	M.	28	Sore on prepuce.	..	For secondary affection.	6 months.	Slightly.	3 months.	Within 6 months.	Sore throat; eruption of body, followed by node on tibia, and numerous spots of unhealthy ulceration on head.
129	M.	22	Small circular sore behind corona glandis, with indurated base. Buboes presented induration (which terminated abruptly), and were occasionally very tender for more than three months.	In both groins.	Ung. hydr. 3ss. every night, or alternate night, for fifteen days.	2 months.	Gums very tender.	2 months, without induration.	3 months.	Scaly, elevated eruption, covering body; dark copper-coloured tubercles on forehead; emaciation.
130	M.	24	Circular sore on skin of penis.	Never.	Rubbed in 2 weeks. Bowels much confined during the time.	2 weeks.	Most violently.	4 weeks.	2 months.	Eruption of central tubercle, with surrounding papulæ; scattered papulæ in various parts of the body.
131	M.	20	Condylomatous-looking sores on skin of penis, leaving raised induration.	No.	None for primary affection.	For sec. affection.	No.	About 2 months.	2 months.	Mottled skin, the darker parts slightly raised.
132	M.	25	Sore, leaving deep seated abrupt induration at end of nine months; remaining after taking medicine for secondary syphilis.	Yes.	Said he took pills for two months.	At first.	Not at all.	6 weeks, leaving "callous lump."	6 months.	Eruption of clustered papulæ.
133	M.	28	Had several sores; last one healed by caustic, leaving no induration.	No.	None for the last sore, but previously.	..	12 months before admission.	Last sore 4 weeks.	6 months.	Several sores, covered with thick brown scabs, on head and face; throat irregularly and extensively ulcerated.
134	M.	24	Sore on lower part of prepuce, causing paraphimosis.	Yes.	No.	..	No.	10 weeks.	3 months.	Sloughing throat; spots of scaly, circular, elevated eruption; other spots, terminating in patches of ulceration, concealed by thick brown scabs.
135	M.	23	Sore behind corona glandis, destroyed by caustic.	..	One week; bowels much confined.	5 weeks.	3 weeks.	3 weeks.	6 months.	Eruption of desquamating papulæ on body, followed by iritis; scrofulous glands in the neck.
136	F.	17	Discharge. Increased vascularity of parts around clitoris.	..	No.	..	..	..	Uncertain.	Circular patches of scaly eruption covering body, not elevated above the surface

137	F.	21	Corresponding superficial sores on the opposite surfaces of labia; sore, with indurated base, on margin of anus, extending within the sphincter.	Yes.	No.	..	..	4 months at least.	4 or 6 months.	A few circular slightly raised spots on arms and body, followed by darkish brown discolouration of mouth, terminating in mealy exfoliation; subsequently, tubercular eruption scaling upon the surface; one spot on the chin, presenting the character of lepra.
138	F.	17	Sore on left labium.	Yes.	Fornearly a month. Bowels very much confined.	At first.	Violently.	5 months.	3 months.	Sore throat; scattered spots of copper-coloured eruption re-appearing during nine months.
139	F.	18	Discharge; ulcer, which broke out again after healing.	Yes.	No.	..	..	1 month.	4 months.	Clustered papulæ, forming patches of eruption on various parts of the body.
140	M.	23	Phimosis, with thickening in the upper part of the prepuce from a sore.	No.	Rubbed in ung. hydr. ʒss. o. n. for ten or twelve days.	2 months.	Yes.	Thickening and phimosis remained after 4 mths.	4 months.	Sloughing throat; enlarged tonsils; eruption of small pale papulæ covering face and body; one or two spots of scaly eruption.
141	M.	32	Sore, leaving indurated cicatrix.	No.	None for primary affection.	For sec. symptoms.	For sec. symptoms.	..	..	Tubercles, covered with very thin shining scales, and terminating in a few places in circular spots of ulceration.
142	F.	21	Small sore.	No.	None for primary affection.	For sec. symptoms.	For sec. symptoms.	3 weeks.	6 months.	Scaly, irregular eruption on face and upper part of body; a few distinct spots, considerably raised.
143	F.	..	Discharge. No history of sore.	Yes.	5 or 6 weeks. Bowels much confined.	Says for bubo.	Profusely for 1 week.	..	10 months.	Scaly eruption, scarcely elevated, covering body.
144	M.	24	Sore, commencing as small pimple, which broke in a week.	Yes.	None for primary affection.	For sec. affection.	..	6 weeks.	3 months.	Clustered papulæ, covering whole body, the central papulæ the largest; sore throat; tonsils presenting an ash-coloured surface.
145	M.	21	Sore, extending under prepuce, surrounded by much induration.	Yes.	Took a few pills.	1 month.	Slightly.	10 weeks.	10 weeks.	Excavated ulcer of tonsils; small tubercles on forehead, some of which present points of lymph or pus.
146	F.	20	Sore within right labium.	Yes.	For three weeks.	6 weeks.	Slightly.	3 months.	6 months.	Spots of scaly eruption, covering the whole of the body in irregular patches; indolent ulceration of the throat.
147	F.	20	Sore within labia. Had the disease before.	No.	In sarsaparilla for four weeks.	5 weeks.	No.	6 weeks.	2 months.	Isolated scaly spots on body, assuming a tubercular character upon the neck.
148	F.	19	Sore, appearing as small pimple.	Yes.	None.	For sec. affection.	No.	1 month.	9 weeks.	Small circular patches of copper coloured eruption, scaling on surface, covering the whole body.

TABLE I, CONTINUED.

	Sex.	Age.	Primary affection.	Bubo.	Took mercury.	Commenced mercury.	Mouth affected.	Primary sore healed.	Appearance of secondary symptoms.	Secondary symptoms.
149	F.	21	Circular sore on external surface of labium, without much induration, presenting rounded eminences in the centre.	No.	None for primary affection, except cinnabar fumigation for twenty days.	For sec. affection.	Slightly.	2 months.	10 weeks.	Enlarged tonsils, presenting circular, flat, opposed ulcers, with red margins; scaly eruption, confined to arms; dryness of cuticle of palms of hands.
150	F.	17	Sore on external labium, leaving induration for five weeks after it healed.	No.	For five weeks; and rubbed in for three weeks subsequently. Bowels very much confined.	2 weeks.	Sore for three weeks.	1 month.	2 months.	Enlargement and superficial ulceration of the tonsils, which presented a dirty surface, covered with purulent secretion. This continued, more or less, for eight months, and was then followed by spots of copper-coloured eruption on the forehead and arms.
151	F.	19	Sore on inner surface of labium.	No.	None for primary affection.	For sec. symptoms.	For sec. symptoms.	3 weeks.	2 months	Eruption covering body, leaving copper coloured stains.
152	M.	24	Sore, with cartilaginous hardness, causing phimosis.	Slight.	Half a dozen doses.	..	No.	..	1 month.	Ulcerated throat; scaly eruption covering body.
153	M.	28	Ulceration of glans penis, succeeding previous disease.	..	Took thirty pills, two a-day.	5 weeks.		..	5 weeks.	Ulceration of tonsils, as deep at circumference as in the centre; small spots of flat scaly eruption covering body.
154	M.	24	Sore on corona glandis, with indurated base.	Yes.	None for primary affection.	3 months.	For sec. symptoms.	6 weeks.	10 weeks.	Ulcer on both tonsils, covered with a layer of adhering ash-coloured lymph; papular eruption, three or four papulæ being clustered together, and desquamating by means of one entire piece of cuticle, giving something the appearance of scaly eruption.
155	M.	28	Gonorrhœa. No history of sore.	No.	For two weeks, and subsequently for a month, for secondary affection.	6 months.	Twice for secondary symptoms.	..	6 months.	Scaly eruption covering body; followed for two years by continued re-appearance of small pimples on the nose, and circular red elevated patches of cuticle on palms of hands.
156	M.	26	Sore upon skin of penis.	Slight.	For three weeks for secondary affection.	6 months.	Slightly.	About two weeks.	6 months.	Scaly, flat, elevated eruption; small brownish tubercles under the thick cuticle of hands continued to re appear for two years. Had a phagedenic sore on the penis after the first appearances of the eruption.

157	F.	20	Sore on right labium, leaving a permanent cicatrix; induration remained for three weeks after it had healed.	No.	No.	..	..	2 months.	5 months.	Scaly eruption, followed in three months by a crop of pimples on chest and body; six months after, distinct circular patches of scaly eruption with raised edges; right tonsil superficially ulcerated; livid raised tubercles on hands. Had a fresh sore five months before the appearance of the last-mentioned eruption.
158	M.	35	Sore, with indurated edges, commencing as a pimple.	No.	None for primary affection.	For sec. symptoms.	For sec. symptoms.	6 weeks.	6 weeks.	Desquamating copper-coloured eruption.
159	M.	17	Sore round corona glandis.	No.	Irregularly, for secondary affection, and in large quantities.	4 months.	For three months.	5 months.	4 months.	Circular spots of copper-coloured eruption, raised at the edges, and covered by light ragged scales.
160	M.	20	Indurated sore, destroying frænum.	No.	Took 2 pills a-day for 3 weeks, and 1 pill a-day 5 weeks more. At work out of doors while taking mercury.	3 weeks.	Yes.	2 months.	4 months.	Circular red eruption; skin mottled; elevated circular patches in palms of hands; sore throat.
161	M.	46	Almond-shaped sore on skin of penis; another sore on left lip of the urethra.	In right groin.	Rubbed in a fortnight.	10 weeks.	Yes.	13 weeks.	6 months.	Livid copper coloured spots on body, with tendency to ulcerate in the centre; tubercles on face. Had been very badly fed previous to appearance of eruption.
162	M.	27	Several sores on penis; one destroying the lips of the urethra, leaving some induration.	No.	Three or four pills only.	For sec. affection.	No.	1 month.	3 months.	Eruption of clustered papulæ on shoulders, arms, legs, and face.
163	M.	22	Sore, with much circumscribed induration.	Slight.	For secondary affection.	..	..	2 months.	1 month.	Faint tubercular eruption on back, arms, face, and body.
164	M.	22	Sore behind corona glandis, leaving induration.	Yes.	Irregularly, at different times.	For primary affection.	Once slightly.	1 month.	3 months.	Clustered papulæ of very livid colour, forming distinct patches on back, and elsewhere; some inclined to desquamate.
165	M.	18	Sore, destroying frænum, and leaving induration.	No.	None.	..	..	9 days.	2 months.	Mottled skin, caused by prominent papillæ, which are redder than natural.
166	M.	23	Superficial sore on prepuce, healing without induration, but leaving a glazed appearance.	Isolated gland for 4 months.	None for primary affection.	..	..	3 or 4 weeks.	2 months.	Mottled skin from prominent papillæ; circular patches of scaly eruption, with healthy skin in centre; vascularity of throat; red spots on palms of hands, without elevation of the cuticle.

TABLE II, GIVING A STATISTICAL ANALYSIS OF THE 166 CASES OBSERVED.

	Bubo.	No bubo.	No record of existence of bubo.	Papular eruption.	Pustular eruption.	Scaly eruption.	Tubercular eruption.	Copper-coloured blotches.	Ulcerated throat.	Throat affected, but not mentioned as ulcerated.	No history of primary ulcer.	Ulcer with characteristic induration.	Ulcer not characterized.
In the 166 cases, recorded in Table I, there were.....	78	55	33	44	15	60	30	19	63	17	20	67	79
Or per cent.....	47	33·1	19·8	26·5	9	36	18	11·4	32	10·2	12	40·3	47·5
In 31 of these cases, occurring in males, where the primary sore presented a characteristic induration and was treated by mercury	19	11	1	7	4	11	6	4	14	5	..	..	..
Or per cent.....	61	35	3	22·5	12·8	35	19	12·8	4·5	16	..	..	..
In 17 of these cases, occurring in males, where the primary sore presented characteristic induration, treated without mercury	7	9	1	8	2	5	2	2	5	2	..	..	..
Or per cent.....	41	53	5·9	47	11·7	29	11·7	11·7	29	11·7	..	..	..
In 21 of these cases, occurring in men, where the primary sore is not recorded as indurated, but was treated with mercury	8	5	8	4	3	3	5	4	8	0	..	..	..
Or per cent.....	38	23·8	38	19	14	14	23·8	19	38	0	..	..	..
In 19 of these cases, where the primary sore is not recorded as indurated, and was treated without mercury	10	5	4	3	1	10	1	1	10	2	..	..	..
Or per cent.....	52·6	26	21	15·7	5	52·6	5	5	52·6	10·5	..	..	..
Thus, in 48 cases, in male patients, presenting characteristic induration, there were	26	20	2	15	6	16	8	6	19	7	..	..	..
Or per cent.....	54	41·6	4	31	12·5	33·3	16·6	12·5	39·5	14·5	..	..	..
In 40 cases, where no induration was noticed	18	10	12	7	4	13	6	5	18	2	..	..	..
Or per cent.....	45	25	30	17·5	10	32·5	15	12·5	45	5	..	..	..
In 52 cases, where the primary sore was treated with mercury	27	16	9	11	7	14	11	8	22	5	..	..	..
Or per cent	51·9	30·7	17·3	21	13·4	26·9	21	15·3	42·3	9·6	..	..	..
In 36 cases, where the primary sore was treated without mercury	17	14	5	11	3	15	3	3	15	4	..	..	..
Or per cent.....	47·2	38·8	13·8	30·5	8·3	41·6	8·3	8·3	41·6	11·1	..	..	..

ON COMPOUND FRACTURE OF THE CRANIUM, WITH DEPRESSION.

By JOHN CHARLES HALL, M.D., Fellow of the Royal College of Physicians of Edinburgh, Member of the Royal College of Surgeons of England, etc.

(Concluded from page 709 of last Number.)

CASE X. In that colony of filth and wretchedness, Kensington-buildings, the inhabitants of which have, for the most part, migrated from Ireland, a policeman informed me a fight had taken place, and that a man was very seriously injured. On hastening to the place, I found a man lying in a senseless condition upon the floor of a dirty room; and on examining his head, a contused and ragged wound in the scalp, leading down to a fracture of the parietal bone, with depression, presented itself. The injuries appeared very severe, the wretch who had inflicted them having repeatedly jumped upon the head of his victim with his heavy nailed boots. The hair was shaved from the side of the head on which the injury had been sustained, the wound carefully brought together, and the man laid upon his wretched bed on the floor. Whilst I was debating what ought next to be done, and considering the propriety of sending for a surgeon, that the trephine might be used, as the man still continued insensible, he exhibited signs of returning consciousness, and began to turn about on his bed; he slowly opened his eyes, looked round the room, and then was violently sick. He next asked, if the man who had injured him had been taken to the station-house. He was bled to eight ounces the same evening, and a poultice applied to his head, for the state of the scalp rendered it vain to look for union by the first intention; the treatment afterwards consisted in keeping the bowels well opened. Notwithstanding the age of the patient (46), the great depression of the bone, the frightful contusion of the integuments, and a constitution broken up by bad food and the worst kinds of intemperance (added to which, he was living in a room unfitted for the abode of a pig), this man recovered without a bad symptom.

[It may not be foreign to our subject, to pause a moment to remark how great are our disadvantages in treating patients in such abodes, and how great the evils of defective sewerage and of ill-ventilated dwellings to all classes of the community. In London, to which the operations of a recent Act are not applied, these abominations are, even at this moment, exerting their poisonous influences; and what I predicted[1] some years ago, has been fully confirmed by the localities in which malignant cholera has been the most fatal in its effects during the present visitation. Any one passing along the magnificent streets of the great metropolis, on either side of which are shops filled with every thing that can please the eye and administer to the luxuries of life, as well as to its necessities; any one looking on the moving mass of youth, beauty, rank, and fashion, by which they are crowded,—may fancy himself in some fairy-land; some land in which disease is never seen, and

[1] On the Necessity of Removing those Causes which Increase the Bills of Mortality. By J. C. Hall, M.D.; also, Letters to *The Times*, on the Causes Productive of Cholera. By J. C. Hall, M.D.

from which want, and sickness, and sorrow, have long been banished. Would that I could carry the young, the rich, the thoughtless, to some eminence, for one brief hour, and unroof some of the misery of which they know nothing! What would they then see within a few yards of that great highway—that stream of wealth and fashion? The abodes of poverty, disease, and death. These houses are unknown, save to the medical practitioner, the parish surgeon, the missionary of the Home Society, or the collectors of the pence men pay for living, or rather dying, in those miserable habitations. There, sources of fever and of cholera, though unnoticed by the rich and great, too surely exist. The rooms are never cleansed—the nature of their floors is concealed by layers of filth, often the accumulation of years; they are never lighted by the sun-beams; nor are they ever purified by a current of fresh air—for that which enters them is tainted by the heaps of decomposing animal and vegetable matters which surround such houses, "stealing and giving odours". And yet, into such dens, from which the majority of the beasts of the field would fly, families consisting of ten or twelve human beings are crammed, and there perform all the domestic duties. Men, women, and children, there herd together; eat, drink, sleep, wash, dress, and undress, before each other; it is in such places that all ideas of decency, virtue, and morality, are broken down; that crime is generated, brought forth, and nurtured. There, too, the babe comes into the world without a blessing; and the old, grey-headed man passes from it without a hope. In such places, fever, which extends to the more favoured homes of the rich, is first engendered; for whilst the evil is unchecked, it is increasing. It is foolish to suppose, because the poor are the first victims, that the rich and noble do not suffer in their turn. Yes, it is in such places as these,—the intolerable filth and disgusting odours of which are unknown and inconceivable, except by those whom duty or humanity causes to visit them,—that the fatal seeds of diseases are sown, the fruits of which are most fearful to every class in this great kingdom. Can it be surprising, that in such lanes and back-courts, within a few yards of those noble streets adorned by splendid houses, and crowded with a living mass of beings possessed of all that riches can procure, fever and crime at present exist? And that this will continue to be the case is certain, until the knowledge of the evils thus occasioned shall have compelled their removal. This, we are told, is the seed-time of improvement; may the harvest be to us and to our children, under God's blessing, most abundant.]

Case xi. R. T. was knocked down by the horses of the Dart coach, in the streets of Kensington. When called to attend him, I found the patient in a house, supported in a chair, and a chemist, lancet in hand, attempting to bleed him; why, I know not, for the man was cold, pale, and pulseless. There was a wound in the scalp, and a fracture, with depression, over the frontal bone. He was put into a warm bed, and warmth applied to his feet; the head was shaved, and the wound carefully closed. It was twenty-four hours before he spoke at all; and for many days he could only articulate "yes" and "no". When reaction came on, he was purged, and cold water applied to his head. It was three days before it was thought necessary to bleed him; eight ounces

were abstracted, which removed a fixed pain in the head. The man perfectly recovered.[1]

Case xii. A Frenchman, æt. 54, was admitted into the Hôtel Dieu, having received a blow upon the frontal bone with a stone, or rough edge of a brickbat. The scalp was much bruised, and a ragged wound in the skin led down to a fracture with depression. The injury had been sustained the day before; but he could not, or would not, give a very clear account of the way in which he had met with the accident. He complained of much soreness in the wounded scalp, which was "*all he cared for*". He was quite sensible; and there were no symptoms indicative of pressure upon the brain. Much against his inclination, he was bled, kept upon a low diet, and an aperient given every morning. When I left Paris the wound had healed; and in a day or two I doubt not the man was in a condition to return to his ordinary occupation.

Case xiii. A girl about fourteen years of age came under my care for a fracture, *with depression*, extending from the temporal to the right parietal bone, with a contused wound of the scalp. As there were no symptoms denoting pressure upon the brain, in accordance with the practice I have for many years followed, the girl was sent to bed, the room darkened, the head shaved, and kept cold with an evaporating lotion, the wound having first been very carefully brought together. It was afterwards requisite to take away a small quantity of blood, and to administer several brisk purgatives. She perfectly recovered; a depression still remaining over the fracture, which could easily be detected.

Case xiv. —— was admitted into St. George's Hospital with compound fracture of the skull, with depression. The man walked to the hospital, and was perfectly sensible. Notwithstanding the absence of any symptoms, it was thought right to prevent any arising, by using the trephine. The operation was very carefully and ably performed by a gentleman, then one of the surgeons to that hospital, and the depressed portion of bone raised. The man went on remarkably well for two or three days; he then had shivering fits, complained of great pain at the angle of the jaw, over the region of the loins, and in the knee-joint. He became jaundiced, and died. Secondary deposits of matter were found in several parts of the body.[2]

When I began my studies at St. George's Hospital, as the pupil of Sir B. C. Brodie, amongst a good deal of valuable advice dealt out in those short, pithy sentences for which he was so remarkable, and which were calculated to produce a lasting impression on the minds of his pupils, was a recommendation "*not to overlook the cut fingers, ulcerated legs, and broken heads*". Following this advice, and carefully observing cases of compound fracture of the bones of the head with depression, and the treatment adopted both in and out of the hospital, I very soon found that many cases died in which the trephine was applied, and that many recovered in which this operation was not performed; and it will be remembered by many of my old friends and fellow-students,

[1] Mr. R. J. Pollock saw this case with me.

[2] I have given only a brief outline of this case, as I intend, on a future occasion, to enter into the consideration of secondary deposits of matter after injuries and operations. I will then transcribe the whole of this case from my note-book.

that, many years ago I ventured *to question the propriety of using the trephine in any case of compound fracture of the cranium, with depression, in the absence of symptoms denoting pressure on the brain.* This opinion was then regarded as a sort of presumptuous medical heterodoxy; and in the animated debate which took place at the Medical Society of the hospital, on the subject, with the exception of my old teacher and friend, Mr. Lane, there was hardly a student or a surgeon but insisted that the operation ought to be performed in all cases of this nature, whether symptoms were or were not present. Many cases which have since that time been published, and many others which have now been under my own care, and which I have seen under the care of others, during an active professional life, have convinced me fully, that many persons recover after their skulls have been fractured and a portion of bone depressed, without its having been elevated, even when a wound in the hairy scalp communicates with the fracture, and that the danger is much increased by the operation of trephining. The degree of pressure the brain can sustain, doubtless varies in different individuals: in some, slight pressure produces very great inconvenience; in others, the greatest depression is observed to occasion little or no uneasiness. It will also, in every case, be very necessary carefully to distinguish between the symptoms produced by concussion, and those depending on compression of the brain. This can, in most cases, easily be done, if some little time be allowed for the stupefaction, which a violent blow upon the head is certain to occasion, to pass away; and, as the effects of concussion gradually abate, a very little delay will enable the surgeon to ascertain correctly the precise nature of the injury, and to act accordingly.

After compound fracture of the skull, with depression, where the patient retains his faculties, all I have found necessary, is to order the wound to be very carefully closed. The hair should first be shaved off from the whole of that side of the head on which the blow was received, the wound washed, and if any splinters of bone be seen at the bottom of it, they ought to be removed, and then the edges must be gently and carefully brought together, care being taken to exclude every particle of air. The edges must be kept together by adhesive plaster, and supported by a proper bandage; cold water, an evaporating lotion, or ice, should be applied to the head. Rest, confinement to bed, purgatives with calomel, local and general bleeding, if required, and the strictest attention to diet, which should be the fever-diet of our hospitals, will of course be requisite; and any excitement, or any excess either in eating or drinking, must, for months after any injury of the bones of the head, be most carefully avoided.

If, after injuries of this nature, the patient remain in a state of torpor, the trephine must be used, and the depressed portion of bone raised; but, in the absence of symptoms of compression, this operation, in my opinion, ought never to be performed. That the elevation of the depressed portion of bone would be very advantageous and highly desirable in every case, there can be no doubt, if the operation were in itself unattended by danger; but let it be performed on twenty men in a state of health, and how many would survive the infliction? And I will here repeat an observation I ventured to make, six or seven years ago, in

the *London Medical Gazette*, when speaking of compound fractures of the skull and their treatment: *If the operation of trephining were in itself unattended with danger, that would be an unanswerable argument for its employment in all cases of compound fracture of the bones of the head, with depression; but this, unfortunately, is not the case.*[1] And more recently, I have had the pleasure of seeing this opinion confirmed, and in nearly the same words, by no less an authority than my old friend, Mr. Guthrie,[2] who remarks, "that if the operation by the trephine, or that of sawing out a piece of bone from the head, were not in itself dangerous, there could be no hesitation about its use; *but it is a* DANGEROUS OPERATION."

Injuries of the head affecting the brain are highly important, both from the danger by which they are always accompanied, and the frequency of their occurrence. That the ancients trephined far too often is certain; while some surgeons, perhaps, in the present day, from witnessing the mortality by which the operation is attended, fall into the other extreme. The cases above mentioned as under my more immediate care, prove clearly that it would have been useless to have resorted to the operation in any of them, for they all recovered, which would in all probability not have been the case had the operation of trephining been resorted to; and they also go, in common with the numerous interesting recoveries which have been placed before the profession by Abernethy, Bell, Lawrence, Hill, Latta, Desault, Guthrie, and other eminent practitioners, to prove that the brain will bear a considerable degree of depression without injury; and when no symptoms denoting mischief are present, the employment of the trephine appears to me the most likely means of producing them.

After fracture of the bones of the head, it will be, as we have already observed, very desirable to direct our inquiries with the view of ascertaining whether the patient have continued in a state of insensibility from the moment of the accident; because there is, should this prove to be the case, reason for hoping that the symptoms are the result of concussion only. In the case of the little boy, Lee, though stunned by the blow, the brain gradually recovered its proper functions. Mr. P. (case vi, recorded in the last number of this Journal, p. 707,) remained insensible for a considerable time, until the side of his head was half scalped by the knife of the surgeon; and yet he regained his senses in time to prevent the completion of the operation, and lived for many years after the injury had been received. The effects of the shock the brain has received at the moment the fracture is produced, will gradually diminish, and, after a time, cease altogether. If, immediately after a fall or blow, by which the bones of the head are fractured, the man gets up and walks away, it is very clear the brain cannot have suffered from concussion; still, such a patient requires to be very carefully watched. The same man, in an hour (it may be more), often becomes drowsy, next, insensible—the alarming symptoms, which denote compression of

[1] Vide also Remarks on the Nature and Treatment of some of the more Important Diseases. By J. C. Hall, M.D. Second edition, pp. 158, 159.

[2] On Injuries of the Head. By G. J. Guthrie, F.R.S. p. 105.

the brain, having now supervened. There are cases, also, in which we find exhibited the combined effects of concussion and compression.

In many cases of concussion of the brain, I have witnessed the evil effects produced by the repeated abstraction of large quantities of blood. For example: a man falls from the top of a house, and fractures his skull; he is carried to bed in a state of insensibility, with coldness of the extremities, and a feeble pulse. By and bye he rallies, as was seen to be the result in cases x and xi; the pulse rises a little, and sensibility is partially restored; blood is taken away immediately; the pulse rises again after a few hours, and becomes a little fuller; more blood is taken away. And this practice is again and again repeated, until the patient sinks at once, or recovers only to be for weeks, months,—it may be, for the remainder of his life,—nervous and enfeebled. This opinion may not coincide with that of every medical practitioner; but repeated observation has led me to the conclusion, that concussion of the brain acts upon the system in nearly the same way as syncope, arising from pain, grief, irritation, or any other cause; and in the treatment of which, blood-letting would be the last remedy thought of.

"Immediate dissolution, like syncope, properly depends upon an affection of the brain, by the loss of a large quantity of blood, or even of a very small quantity in a constitution enfeebled by disease." And if this opinion of Dr. Marshall Hall be correct,—and there can be no doubt of it,—the reason why the abstraction of even a small quantity of blood, at such a moment, may be productive of the most fatal consequences, will be evident; for the energies of the brain are considerably weakened, and its functions in part suspended, by the infliction of the blow upon the head.

Sir B. C. Brodie has pointed out, that, in some cases of concussion, death results from "some alteration or suspension of the action of the heart"; and we all are aware that sudden and violent impressions on the nervous centres, even though these do not occasion any perceptible breach of substance, frequently suspend, or altogether annihilate, the movements of the heart. Thus, in concussion of the brain, not only is there insensibility, but also a more or less complete suspension of the circulation, arising from failure of the power of the heart. This condition may be permanent, so that animation cannot be restored; or it may be temporary, as in an ordinary "fainting fit," as it is commonly called. Cases of sudden death after violent blows upon the epigastrium, are very far from being uncommon; and the cause is probably the same, namely, from the shock being communicated to the extensive plexus of ganglionic nerves, radiating from the semilunar ganglia, and proceeding to the abdominal viscera. The contractile power of the heart may also be weakened to a dangerous extent, by other violent impressions on the nervous expansions: for example, very extensive burns in children frequently produce fainting, and even death, by the depression which they induce.

We are quite at a loss to account for the way in which a man, who five minutes before was in the possession of health and strength, and quite capable of bearing the evacuation of a large quantity of blood, becomes, by a blow upon the head, which does not even fracture the bone, unable to sustain the loss of one wine-glassful; and yet every one who has

taken the trouble to reflect on the cases of this nature which have come under his care, will be prepared to admit that such is the fact. It would be easy to enumerate numerous other causes of sudden suspension of the action of the heart; but they may all be traced to a violent shock to the nervous system, though we have yet to learn the exact manner in which these effects are produced. As yet, we know nothing! When the blow producing a fracture of the skull has been very violent, the patient, at first, lies quite motionless, the pulse is hardly to be felt, and the respiration almost annihilated. "He was taken up for dead", says the witness before the coroner, "a surgeon was sent for, who bled him, but he could not get much, only about a tea-cupful, and the man died soon after"—verdict, "*Accidental Death*"; nor does a month pass without a newspaper supplying some such information, and adding—"everything was done that medical skill could suggest"; and yet that very tea-cupful of blood may have held the balance of the scales in favour of life; for I have seen cases, even where bleeding has not been resorted to, and in the which partial reaction had taken place, but nature has appeared unequal to the effort, and life, like the flame of an expiring candle, after burning brightly for a moment, has gradually passed away. Would not "*Died from Bleeding*" have been a more correct verdict?

There is another practice equally common, and equally deserving of censure. I allude to giving brandy and water immediately after injuries to the bones of the head. At the moment after concussion of the brain, when all the powers of life are depressed, stimulants can never be employed with advantage; and when slight reaction has come on, the practice becomes very much more pernicious and indefensible. The fact that the heart and brain have sufficiently rallied from the shock to carry on the animal functions, proves that the administration of wine and brandy cannot possibly be required: and the making an unfortunate fellow-creature swallow brandy and water when in this condition, appears very likely to destroy life, even should he not be killed in the act of swallowing. It frequently happens, that some small vessel within the cranium is ruptured at the moment of the accident; and that condition of the system on which the feeble action of the heart depends, is calculated to prevent the ruptured vessel from pouring out its contents, and the longer this state continues, the less will be the danger of compression of the brain. At first, we can do little more in these cases than very carefully to watch the state of the circulation; and when reaction has fairly set in, blood must be taken away in sufficient quantity to prevent that immoderate hardness and frequency which the pulse has a tendency to assume after these accidents, when the first shock to the system begins to abate. But the plan of giving brandy to patients when in a state of insensibility, by which they may be choked, and of taking away blood the moment a pulsation is felt at the wrist, is yet far too common.

In cases of compound fracture of the cranium, in which, from the symptoms of pressure upon the brain, it is necessary to trephine, the proper period for performing the operation is a question of importance, and one on which, unfortunately, there is a difference of opinion. Mr. Guthrie thinks there is less danger on the first day: Sir P. Crampton

and Mr. Colles, that the operation on the first day only increases the irritation of the already severely injured parts. The case of the nephew of Lord Brougham, related by Mr. Crampton, bears upon this point, and proves that even fragments may be driven into the substance of the brain, without their immediate abstraction being required or warranted. I should most certainly advise the immediate removal of the splintered portions as a general rule, which will not be without exceptions; for in this case, the moment Mr. Crampton touched a large portion of bone with the intention of removing it (for the fragment was driven into the brain), the body became convulsed, and the unfortunate young gentleman moaned deeply; all further efforts were consequently desisted from; the case was left to nature, strict antiphlogistic measures being resorted to. At the end of twenty-two days the pieces of bone were discharged by the process of nature. The late Mr. S. Cooper has remarked, that "where the depressed portion of a bone is denuded by a wound in the scalp, a trial to raise it with the elevator *may* sometimes be proper, even though urgent symptoms of pressure do not exist; in such cases Sir A. P. Cooper sanctions the use of the trephine, but my own experience and observations would induce me to abstain from the operation."

The symptoms after accidents of this nature appear to vary, in some degree, according to the locality of the fracture; the upper part of the brain often bearing from the first a great deal of pressure with impunity, or becoming accustomed to it. It was the opinion of the late Mr. Liston, that in *punctured fractures* of the skull the trephine ought to be used in all cases, for "the presence of numerous sharp spiculæ from the internal table, for even a short period, is frequently followed by intense inflammatory action, propagated to the brain and its more immediate investments." The case of Ridley, Earl Spencer's groom,[1] the boy Lee, the woman struck by a brass candlestick, and the boy kicked by a horse in Smithfield (the two latter cases are related in the work of the late Mr. Abernethy), show, however, that in many cases of punctured fracture, the operation is not required. There is one symptom to which I would direct attention, which I have observed in two cases, both fatal, and which should always lead to an unfavourable prognosis—namely, a watery discharge from the ear, which, in all probability, comes from the sac of the arachnoid membrane, and is indicative of great danger. In such cases the direction of the fracture is towards the body of the sphenoid and over the petrous portion of the temporal bone.

Case xv. December 1844. I was requested to ride over to Everton, with as little delay as possible, to visit Henry Barker, æt. 45. He follows the occupation of an engineer, and is a remarkably tall and powerful man. His habits are temperate; he is married, and the father of a numerous family. It appeared, that in doing something at the engine, his head had that morning been drawn into the machinery, and had become completely wedged between two pieces of iron, one of which had entered the back part of his head, tearing the scalp from the bone for more than four inches. There was a fracture, with considerable depression, which could be both seen and felt; it was more than two inches square, and that portion of the occipital bone was quite

[1] Case v, p. 706.

driven below the other parts of the skull. He was dull and stupid, but I learnt from a gentleman who had seen him from the first, that he was more collected than he had been an hour before; and that he seemed to be gradually regaining his senses. He was cold, and covered with a damp sweat, with a very feeble pulse, which could hardly be felt at the wrist. The edges of the wound were carefully brought together, and the patient kept in bed, the room darkened, and strict quietude enjoined. In the evening he complained of pain in the head and scalp. On shaving the head,—which I did not consider it prudent to permit in the morning, from the very weak state in which I found him,—the whole of the scalp on the posterior part of the head appeared much bruised and discoloured; thirty leeches were applied, and a bladder filled with ice and salt was suspended over the head. Ten grains of calomel to be taken at bed time, and an aperient draught the next morning. The next day it was necessary to direct twenty ounces of blood to be taken away, and three grains of calomel to be taken every four hours. The next day it was also necessary to take more blood; and two days afterwards he was again bled. The quantity of blood this man lost was enormous. He perfectly recovered; and to this large abstraction of blood, and the free exhibition of calomel, he undoubtedly owed his life. It will be quite impossible to lay down any rule, as to the employment of the lancet so as to suit every case: but it is well in the first instance to take only a small quantity of blood, and the quantity must be increased as urgent symptoms present themselves.

Some are in the habit of combining calomel with opium after injuries of the head,—a practice, to say the least of it, of questionable utility, except in those cases of mania which sometimes follow injuries of the head; it is then, if properly administered, undoubtedly useful, particularly if combined with small doses of emetic tartar in solution. When inflammation of the brain and its membranes have continued for some time, after the free use of the lancet, and the administration of calomel, I have often seen the application of a blister to the scalp, which should be dressed with mercurial ointment, afford considerable relief.

In conclusion, it is but fair to admit, that in the majority of the favourable cases of compound fracture of the cranium with depression, recorded by authors, in which recovery has taken place without using the trephine, the patients have been young; this has not, however, been the fact in the patients coming more particularly under my own observation. Having written to record facts, rather than to establish any theory of my own, it remains only to add my conviction, that in Compound Fracture of the Cranium with Depression, in the absence of symptoms of pressure on the brain, the dangerous operation of trephining is altogether uncalled for and unnecessary; and, in all cases, so hazardous an operation ought never to be resorted to without the most urgent necessity. "Gravis tamen satis est operatio, et nunquam nisi indicationes adsint instituì debet."

Sheffield, August 1849.

DESCRIPTION OF A GALVANIC APPARATUS FOR APPLYING CHLORIDE OF ZINC AS A COUNTER-IRRITANT; WITH CASES ILLUSTRATING ITS USE.

By THOMAS SMITH, M.D., formerly Physician to the Leeds Public Dispensary, and to the Cheltenham General Hospital and Dispensary.

Electricity and Galvanism having of late years occupied a prominent position in the treatment of several diseases, the following observations on the utility of Galvanism will, I trust, be found interesting. For the last two or three years, I have been in the habit of using Galvanism as a counter-irritant, finding it less painful than the usual modes, such as moxas, setons, issues, etc. The following is a description of the apparatus I employ, and of my method of using it.

A piece of perforated zinc is fastened or riveted to a piece of platinized silver, or, what will do equally as well, and which I generally use, a sixpence, shilling, or half-crown, according to the size required. The apparatus thus prepared is to be applied with the zinc surface next to the body, the silver being uppermost; over this I place a piece of spongio-piline, previously moistened in salt and water, and retain the whole in close apposition to the skin by means of a few strips of adhesive plaster. At the expiration of every twelve hours, the battery should be removed and washed in salt and water, and then re-applied as before. At the end of twelve days, a deep white eschar is formed, from the action of the chloride of zinc. This may easily be detached, or allowed to slough out of itself, which generally happens about the fifteenth day, leaving a healthy-looking sore. By reversing the galvanic apparatus, that is, applying the silvered surface to the wound, it will be found to heal up quickly; or it may be made to keep up a continuous discharge, by introducing split peas into the opening, or by dressing it night and morning with savine cerate. Where, however, time is an object, and it is desirable quickly to induce counter-irritation, this may easily and speedily be effected by first removing the cuticle either by means of liquor ammoniæ fortissimus, or of acetum cantharidis, and then applying the battery to the denuded surface, and afterwards proceeding as in the former case. In this manner, the same effects are produced in from four to six days, as would require twelve days by the other method. If the latter plan be adopted, it is not uncommon for the patient to complain of a gnawing pain in the part towards the evening of the third day, which, if not relieved, makes him restless and uncomfortable; a mild opiate, administered at bedtime, has generally had the effect of soothing the irritation, and preventing its future occurrence. In delicate females, where it is desirable not to create more pain than is absolutely necessary for the induction of counter-irritation, the first plan is decidedly preferable. I have observed, on three occasions, where the idiosyncracy of the patient had previously rendered the exhibition of opium or its preparations inadmissible, that during the action of the battery they have produced the most tranquillizing effects. Acting upon this inference, would it not be well in such constitutions as are known to be susceptible to injurious impressions from a dose of any opiate, previously to irritate the cuticular surface by

Electricity or Galvanism? I subjoin a few cases illustrative of the efficacy of this mode of treating disease, in conjunction with other general treatment.

Case I. In the autumn of 1847, I was consulted by a gentleman labouring under the more prominent symptoms of phthisis pulmonalis. He had already been subjected to a pretty active course of general treatment, among which repeated blisters, expectorants, cod-liver oil, iodine and its compounds, had formed a prominent part. After trying a variety of the more useful adjuvants in such cases without deriving much benefit, I recommended an issue. My patient objecting to the use of caustic, of which he had formerly had experience, I substituted a couple of batteries, made with a shilling and a piece of perforated zinc, and applied one under each clavicle. As soon as the eschar was removed, the wound was dressed occasionally with savine ointment for about two months. The batteries were then again applied to another part of the chest, in a line with the clavicles, and the old sores allowed to heal up. This process was continued for the space of fifteen months. He was ordered light nourishing food, to avoid all hot diluents and sloppy dishes, to drink moderately of malt liquor, and to exercise himself freely when the weather was favourable. To relieve the distressing cough, which occasioned racking pains and restless nights, I prescribed inhalation of the vapour of the water-hemlock seeds, made in the proportion of one drachm of the bruised seeds to half a pint of boiling water, with half a drachm of chloric ether, and the same quantity of tincture of squills. As tonics, he took occasionally preparations of iron, quinine, calumba, with bicarbonate of potash, and spirits of turpentine. When I last saw him he had regained his healthy looks. His cough had entirely left him; morning expectoration of a mucous character alone remained; the appetite had improved; and the perspirations had ceased. He had, within the last six months, gained fourteen pounds in weight. This I regard as a very favourable indication, though one on which too much reliance ought not to be placed. A slight dulness still remained on the inner third of the left clavicular region, together with increased expiratory murmur. These symptoms, I am in hopes, will ultimately yield; at present, the case wears a favourable aspect.

Case II. A lady, aged 38, the mother of six children, tall, of spare habit, and sallow complexion, applied to me in November last, respecting an affection under which she had been labouring for some months, and which had latterly increased considerably in severity. Her principal symptoms were, pains and giddiness in the head, excessive appetite, almost amounting to bulimia, and when in the horizontal position, throbbing of the carotids and temporal arteries to an extremely uncomfortable degree. Heart's action, 80 in the minute—strong, but not immoderately so; no abnormal bruit; radial pulsation regular, easily compressible, synchronous with heart's action, but weak and small, as compared with the pulsation in the carotids. Mouth frequently clammy; breath of an unpleasant odour; tongue furred in the morning, gradually becoming clean as the day advanced, eyes clear; breathing short and easily accelerated, 22 when quiet, but rapidly increased by motion to 30 and upwards, without a corresponding increase

of the arterial circulation; frequent sighing; countenance at one time deadly pale, and at another very much flushed; sensation of cold water running down the back; occasional tremors; coldness of the feet, and blueness of the extremities; hands very subject to chilblains in cold or frosty weather; skin mostly cold, harsh to the touch, rarely perspiring; urine scanty, showing a copious deposit of the yellow lithates, with an occasional iridescent pellicle; pain in the loins; has been troubled with leucorrhœa and hæmorrhoids; bowels very costive, rarely acting without medicine; fæces cylindrical, variable in colour and consistence, some parts very dark, others clay-coloured; great disinclination to muscular exertion; tottering in the gait; difficult progression; frequent attacks of hysteria. The treatment previous to my seeing her, had, for the most part, consisted of such medicines as were thought best adapted for dyspepsia, and for the relief of the more prominent hysterical symptoms. My impression being, that there was something wrong in the spinal column, I endeavoured to satisfy myself where the latent mischief lay. Percussion along the spinal tract, and hot water applied with a sponge, afforded no positive indication. The tenderness complained of on smart percussion was as evident in other parts of the body, if attention were earnestly called to it. Electro-Galvanism I had so often found useful in assisting my diagnosis in similar cases, that I determined to make trial of it; but not having a machine by me at the moment, and the lady being too ill to attend at my house, and expressing also a great dislike to the contemplated operation, I was compelled reluctantly to defer it to a future occasion. In the meantime, I contented myself with prescribing mild aperients to regulate the bowels, and turpentine rubefacients to be applied to the back. Perceiving little benefit to result from these remedies, and not feeling justified in adopting a more active line of practice until I had obtained more definite information as to the condition of the spinal marrow, I again urged the propriety of allowing me to examine it by means of Electro-Galvanism. This time she consented.

With one hand she held one of the brass tubes of the battery, whilst I, to divert her attention, passed the other rapidly and frequently over the chest and sides of the body. The usual starts witnessed on similar occasions were only apparent; but on suddenly running the rubber, without previous warning, from the nape of the neck down the spine, the moment I reached about the fourth dorsal vertebræ, she suddenly fell forward, and complained of a dreadful sensation in the pit of the stomach. This experiment was repeated with the like result. It is one which I have always considered as pathognomic of spinal irritation, when applied to that particular region of the spine. In myelitis, or meningo-myelitis, intense burning heat is generally experienced, and an involuntary shriek not unfrequently ensues. I have never been able to trace any injurious effects farther than the temporary ones above alluded to, from the employment of Electro-Galvanism in the detection of these diseases. Rough or prolonged manipulation might, and no doubt would, exasperate the latter malady; but I have seen so much benefit from Electricity and Galvanism in the former affection, that I do not hesitate to resort to it whenever I am in doubt as to the true nature and exact locality of the disorder. With the clue thus afforded to my

patient's complaint, I at once resolved to apply two galvanic batteries of the size of a shilling each, above the seat of mischief, immediately over the spine, in the manner advised in the former case. The aperients were continued, and Donovan's syrup of bark in half-drachm doses, with five minims of dilute hydrocyanic acid, P. L. 1836, was prescribed to be taken twice daily. On the seventh night she complained of a good deal of pain in the back. To take morphiæ hydrochlor. gr. ss. at bed-time. In the morning had passed a good night. Eschars forming, covered with a white powder. In twelve days they separated, and were then dressed with savine ointment.

From this day my patient became rapidly convalescent, and in a few weeks returned home quite well.

I could easily multiply cases of the good effects of counter-irritation judiciously applied. I do not attach much importance to the galvanic action produced by the apparatus, but merely recommend it as being an excellent substitute where the more formidable remedies, such as potassa fusa, nitric, or the potential cautery, may be objected to on account of the suffering they entail, and which in some constitutions is an insuperable bar to their use.

Cheltenham, August 1849.

CONTRIBUTIONS TO THE PATHOLOGY AND TREATMENT OF CHOLERA.

By JAMES BIRD, A.M., M.D., formerly Surgeon of the European General Hospital at Bombay, and late Physician-General, Bombay Army.

(*Continued from last Number, page* 724.

III. PARTICULAR SYMPTOMS ORIGINATING IN THE PERVERTED FUNCTION OF INDIVIDUAL ORGANS.

Gastro-enteric Discharges. In fever and common Cholera Morbus of the autumnal months, the discharges from the stomach and bowels consist of vitiated secretions of the abdominal viscera; but in the disease known under the name of *Asiatic Cholera*, running into the asphyxial form, the several gastro-enteric secretions are suspended, though there be copious intestinal discharges, consisting, according to the best chemical examination, of effused *blood plasma*, exuding from the capillaries after normal secretion has ceased. The occurrence of these discharges, which bear, as I have said, no relative ratio to the severity of the other symptoms, seems, however, secondary to the blood lesion, from which those abnormal changes in the respiratory, circulating, and nervous systems, which constitute the phenomena of Cholera, derive their origin. The vomiting was not so constant a symptom in the first stage of the disease as was the diarrhœa, but generally appeared with the development of the second stage. Both have been considered, by some observers, as curative efforts of the system, to relieve the congestion of the abdominal venous capillaries; but this opinion is irreconcilable with the beneficial therapeutic effect of astringents, in combination with medicines that allay irritation, to restrain the excessive intestinal exhalation

of Cholera fluid, containing, as Dr. Parkes and others have ascertained,[1] an abundance of alkaline chlorides, phosphates, and sulphates, and a certain proportion of albumen, along with masses of flocculent matter, considered by Andral to be *modified mucus*, but viewed by Parkes as *modified fibrine*, like what is exuded in the low organization taking place in the follicular deposit of typhoid fever. Masses of this exudation block up the biliary duct, and render viscid the biliary secretion, which is obstructed in its course, but is not altogether suspended. Boehm, who first completed the microscopic examination of these *cholera masses*, referred them all to changes in the epithelial coat,—an opinion which Dr. Parkes satisfactorily shows to be erroneous, there being no proof of the separation of the epithelium until after the death of the patient. *The stools contain a quantity not more considerable than is present in common diarrhœa, if even so much.* It is therefore evident, that the normal *gastro-enteric* secretion is suspended, and that the fluids exuding from the stomach and bowels contain portions of the blood constituents, some of which appear to be rather *altered* in *quality* than *increased* in *quantity*. The relation of these phenomena to the physical condition of the blood and its component elements, is an important link of investigation in the chain of effects, which binds together the progressive phenomena of Cholera; and though much has been already done, yet much remains to be effected by future investigators, to account for discrepancies of result, and establish the truth.

Physical and Chemical Condition of the Blood. In the epidemics of 1818 and 1819, both Europeans and Asiatics were generally bled when attacked by Cholera; but, though I frequently opened the temporal artery and jugular veins, in the worst collapsed cases which were then received into hospital, the blood was so viscid, black, and tar-like, that I seldom succeeded in obtaining any considerable quantity even while the patients were in the hot bath. In the earlier periods the blood flowed more freely from the veins of the arm, though it trickled down in a small, feeble stream, the central portion of which had a florid appearance, while the parts on either side were much darker. When left to coagulate, the clot was soft and loose, and its top covered sometimes by a thin, sizy film. The cases in which this film appeared were chiefly of a gastric character, such as some Continental writers denominate *Cholera Sicca*, being accompanied by a slight degree of diarrhœa, but by much burning pain at the præcordia, great irritability of the stomach, sometimes vomiting of watery fluid, intense thirst, a small frequent pulse, and less diminution of animal heat than usually attends the more severe forms of the disease.

The alterations which the blood undergoes in composition are yet more important than its exterior character, in enabling us to judge of the general condition of the system in these attacks. Dr. Garrod's late communication on the Pathological Condition of the Blood in Cholera,[2] contains the results of former investigations, and what we have since learned on the same subject. All these analyses tend to show that the water of the blood is much diminished in quantity, and that there is a corresponding increase of the solid portion, especially of the albumen;

[1] London Journal of Medicine, No. II, for February 1849, pp. 141 and 151.

[2] London Journal of Medicine, No. V, for May 1849, p. 409.

that the diminution of its alkaline reaction is not due to the loss of salts, but to the impeded excretion of organic acids constantly formed in the system; that the fibrine undergoes changes of quality rather than of quantity; and that urea, in increased quantities, exists, but that the amount differs considerably in the different stages of the disease; being but small in the intense stage of collapse, increasing during reaction, and in excess when consecutive febrile symptoms occur. The relation of these changes to the ascertained nature of the *gastro-enteric discharges* must be manifest, viz., an increased secretion from the alimentary mucous membrane, of thick, white, mucaginous matter, much resembling pus, but probably consisting of modified fibrine, and generally accompanied by excessive intestinal exhalation of water from the blood, carrying with it a certain amount of salts, and causing the darker colour and more viscid state of the circulating fluid, which thus attains a maximum of specific gravity and tenacity, that render it unfit for healthy secretion and the ordinary vital operations of the system.

It may be necessary here to notice that disorganization of the blood corpuscles, which, according to the microscopic observations of Professor Webb of Calcutta, and of others, has been found existing in Cholera, and has been regarded by them as the cause of that loss of power in the blood which renders it incapable of absorbing oxygen, destroys its normal endosmotic power in the lungs, and gives rise to that paralysis of the pulmonary capillaries from which all the morbid changes observed in Cholera necessarily follow. Some further observations on this head are required to establish, or disprove, the truth of these conclusions; Dr. Gairdner having lately found that the microscopic appearances of the blood presented nothing unusual; and Dr. Garrod having seen only in one case, any abnormal appearance of the blood under the microscope.[1]

Respiration and Circulation. Anxiety at the præcordia, and some degree of embarrassment in the pulmonary circulation, marked by yawning and sighing, seemed to attend the first and second stages; but in the *third* one, and period of full development, the respiration became quick and anxious, as if the lungs were imperfectly filled by the inspired air. Prior to 1839, I made no observations on the sounds of either the respiration, or of the heart; and, such being imperfect, I must here have recourse to Dr. Parkes's excellent and instructive remarks on this subject, the truth of them being established by the pathological anatomy of the disease. Slight dyspnœa, tightness, and oppression, were very usual symptoms in the sixty-nine fatal cases seen by Dr. Parkes. The average number of respirations was sometimes very great at a comparatively early period; the majority breathing from twenty to twenty-eight times in the minute, when first seen. The stethoscopic indications of change in the pulmonary organs connected with these symptoms, were, an evident lessening of the inspiratory murmur, which became shorter and bronchial in character, while the expiratory murmur became more lengthened and audible than usual. In several cases, muco-crepitant, mucous, or sonorous râles, were heard at times in one part or other of the chest.[2] Paralysis of the pulmonary air-cells, from loss of power in the blood to

[1] London Journal of Medicine, vol. i. p. 423.

[2] Researches into the Pathology and Treatment of Asiatic Cholera. By E. A. Parkes, M.D. Lond. p. 67.

become arterialized, and increasing debility in the muscles of the glottis, and those which dilate the chest, by which normal respiration is brought to a close, will account for that *aphonia* which forms so remarkable a feature of some Cholera cases, where the patients cannot speak beyond a whisper.

Synchronous with, if not prior to, these abnormal changes of the respiratory movements, the arterial column of blood was found to be diminished, and the venous circulation proportionately obstructed. The impaired action of the heart was in constant ratio to the smallness, rapidity, or intermission, of the pulse at the wrist, which was generally increased in frequency, and very feeble.

Cyanosis, Diminution of Heat, and Cold Sweats. The blue tint of the skin, which was so general a symptom of the worst forms of the malady, had its origin in that imperfect sanguification by which the unoxygenated arterial blood is conveyed in a nearly venous state to the cutaneous capillaries, as manifested by the livid appearance of the extremities, and particularly the skin covered by the nails of the fingers and toes.

This pathological state of the cutaneous capillaries and their circulating fluid, admitting no longer of the usual union of oxygen and carbon, to maintain the animal heat at its normal standard, is followed by a diminution of it on the surface of the body, and a suspension of the natural sebaceous secretion from the skin, with a corresponding increased exhalation of watery vapour.

Præcordial Pain and Cramps. The painful sense of pressure at the præcordia, and the commencement of cramps, were most generally associated together in cases where the nervous energy was partially depressed, or in those where slight symptoms of reaction appeared. The most usual period of the appearance of these muscular spasms, was towards the end of the second stage, when there were present symptoms of irregular or defective innervation, with distinctly marked indications of venous congestion; but, as nervous irritability decreased, and the powers of life became paralyzed in the progress of the third stage, the cramps altogether ceased. The relation between them and the symptoms of *gastro-enteric* irritation seemed to be most intimate; and their severity was in constant ratio to the irritability of the intestinal mucous surface, and its efforts to expel the scanty flocculent stools which followed the more copious watery purging. These cramps chiefly attacked the superior and inferior extremities, and may be viewed as the result of reflex irritation acting on the cerebro-spinal axis.

IV. POST-MORTEM APPEARANCES AND PATHOLOGICAL ANATOMY.

Two very valuable and interesting memoirs on the anatomico-pathological appearances in Cholera have been lately given to the public; one of these, in the *Monthly Journal*, is by Dr. W. Gairdner, Pathologist to the Royal Infirmary of Edinburgh; the other, by M. Raikem, was communicated to the Belgian Academy of Medicine.[1] In the former, only slight allusion is made to the condition of the lungs and other thoracic viscera; and in the latter, several important points of investigation are but partially noticed. Many and varied opportunities, during the different years of Cholera prevailing in India, having occurred to

[1] For a translation of it, see LONDON JOURNAL OF MEDICINE, August 1849, p. 755.

me for correcting observations, and modifying opinions, on this subject, I shall here give several detailed post-mortem examinations, followed by a summary of pathological changes most usually present in the several modifications of the disease, in the hope that, at no very distant period, I may be enabled to present these in a tabular form, together with a more extended series of necroscopic examinations, collected from various sources.

Illustration 1. *Kaira, 20th March*, 1820. Peter Collis, an artilleryman, aged about 30 years, was admitted yesterday evening into hospital, in such a state of exhaustion that he could scarcely answer the questions put to him. The men who brought him to hospital, stated that he had been attacked by the disease an hour before admission, and that, during this time, he had been purged eight or nine times, and had passed nothing but water. Stomach irritable, features shrunk and hippocratic, skin cold, pulse frequent and feeble, violent cramps in the muscles of his legs and abdomen. According to the then Indian practice in Cholera, a vein was opened in the patient's arm, and the blood allowed to flow till ten ounces had been abstracted. The pulse became more feeble, and the cramps were not relieved. Twenty grains of calomel, and a draught containing forty drops of tincture of opium, and a drachm of aromatic spirit of ammonia, were then administered. The patient was put to bed, was well covered by blankets, had bottles of hot water applied to his feet and legs, and took, every half hour, a drachm of aromatic confection, with thirty drops of aromatic spirit of ammonia in two ounces of water. The purging and vomiting continued; and when I again saw him, about an hour and a half after his admission, he was pulseless, but had still slight cramps of the muscles. Was put into a very hot bath, which caused a temporary restoration of his pulse; but he continued to sink, and died this morning about 7 A.M., or little more than twelve hours from the time he was first attacked. A necroscopic examination of the body was made about eight hours after death.

General appearance. The skin of his face, neck, and back, was of a deep purple hue; and that of his hands and fingers shrunken and corrugated.

Head and spine. There was more than a normal quantity of blood in the large sinuses of the dura mater; the veins of the pia mater were turgid, red points in the white substance of the brain very numerous, and a considerable amount of fluid effused into the ventricles. On opening the spine, the ligamentous sheath of the *medulla spinalis* appeared distended with fluid; and on slitting it open, a considerable quantity of effused serum escaped.

Thorax. The lungs were of a deep purple hue, and emphysematous; the right auricle of the heart much distended by loosely coagulated blood, as were the two venæ cavæ.

Abdomen. The liver was of a deep purple hue generally, and in some places, particularly at its edge, quite black; there were several old adhesions between it and the diaphragm. The gall-bladder was distended by black ropy bile, which did not flow into the gall-duct even when the gall-bladder was squeezed forcibly; but on a silver probe being introduced into the duct, it passed readily, though this appeared to be obstructed by viscid mucous matter. The spleen was a little

larger than natural. The mucous membrane of the stomach, which contained the rice-water he had drunk, shewed spots of red vascularity near the pyloric opening. A large quantity of white thick matter, resembling mucus, was found adhering to the mucous coat of the jejunum and ileum; which appeared, after this adhering matter had been removed, to be as red and vascular as if it had been prepared with fine injection. The bladder, which was contracted, contained no urine. The kidneys were pale and granulated.

Illustration II. *Kaira, 4th July* 1821. Thomas Foster, an artilleryman, 27 years of age, was discharged from hospital on the morning of the 3rd July, cured of chronic hepatitis. The same evening he got drunk, and slept out all night in the open air, where he was exposed to the cold and wet of the season. Was admitted this morning with symptoms of the highly collapsed form of Cholera Morbus, and died seven hours after his admission, and thirteen hours after the appearance of the first symptom. A post-mortem examination was made three hours after death.

Chest. The lungs were emphysematous and crepitant.

Abdomen. The small intestines were externally of a vermillion tint; internally, the villous coat was a little more vascular than natural, and contained a large quantity of lactiform fluid. The large intestines were contracted. A slight contraction in the middle of the stomach formed this organ into two bags. The liver was of a livid brown colour, and in the first stage of schirrhus; it presented thread like white lines beneath the peritoneal coat, appearing like small ascarides imbedded in the glandular part. Old adhesions were found between the liver, spleen, and diaphragm. The gall-bladder was filled with dark green ropy bile.

Brain. The dura mater was adhering to the skull cap, but did not exhibit any appearance of congestion, which, however, the pia mater did. The lateral ventricles contained from four to five drachms of limpid fluid, and about one ounce of the same had been effused at the base of the brain.

Illustration III. Serjeant-Major Tomlinson, of the horse artillery, aged 28 years, was taken ill about 6 A.M. on the morning of the 5th of July 1821. Was attacked by purging, soon succeeded by vomiting, and a considerable degree of languor and debility. The symptoms increasing in violence, he applied for medicine about 8 A.M., when twenty grains of calomel and a draught of laudanum were administered. The medicine was vomited soon after, but was repeated at 10 A.M., and with the same effect. As I myself was unwell, I requested Mr. Assistant-Surgeon Mack to see him at 1 A.M. The irritability of the stomach and bowels was then very great; the tongue white and loaded; thirst great; pulse 66, and rather full; accompanied by extreme languor. No fixed pain of any part. Mr. Mack bled him from the arm; ordered the calomel and draught to be repeated; applied a blister to the epigastrium; administered assafœtida enemata, with tincture of camphor and opium; after which remedies the vomiting was relieved, but the purging of rice-water-like stools continued unabated, and the pulse became weaker. Vertigo, with tinnitus aurium, cramps, and clammy perspirations, supervened; and all the symptoms becoming worse, he

died about 12 P.M., or eighteen hours from the attack. A necroscopic examination of the body was made ten hours after death.

Head. Firm adhesion of the dura mater to the skull. The vessels of the pia mater were a little more distended with blood than usual. The lateral ventricles of the brain, which were much enlarged, contained a little bloody serum. An ounce or more of the same fluid was found at the base of the brain.

Chest. Very extensive adhesions of the pleuræ on both sides to the front part of the ribs; the lungs not fully collapsed, and of a purple hue in some parts of the posterior surface. On cutting into their substance, a frothy bloody mucus flowed from the incision, as seen in pulmonary œdema.

Abdomen. The intestines had assumed a leaden colour. The liver, which was attached to the diaphragm, etc., by several old adhesions, though not much enlarged, seemed a coagulated mass of blood. The gall-bladder was filled with dark viscid bile. The other viscera were not examined.

REMARKS. The appearances after death in these two cases are, on the whole, analogous. A greater vascularity of the pia mater than natural, effusion of serum into the ventricles of the brain, red vascular patches in the villous coat of the intestines, and marks of congestion of blood in the liver, point out a similarity of disease, though somewhat modified by the accessory circumstances of each case. The frequent watery stools which accompanied the disease, the cold extremities, and the small feeble pulse, followed the accumulation of blood in the large internal vessels of the body, oppressing the vital powers, and impeding the action of the heart. In Tomlinson's case, the quantity of blood in the liver, and the blueish tinge in the villous coat of the intestines, indicated a greater degree of congestion than there was in Foster's. The adhesions of the pleuræ in the former instance, by impeding the action of the lungs, contributed to produce this effect; and the structure of the liver in the latter seemed unfavourable to the free transmission of blood; as the thready appearance of its peritoneal coat shewed that it was approaching that state which Baillie considers the first step in the progress towards the formation of schirrhous liver. The total absence of bile in the stools and intestines, arose probably from the viscid nature of that fluid, which became an obstacle to its egress from the gall-bladder.

ILLUSTRATION IV. Tannah Garrison, 15th September 1818. A peon of the Bazar establishment was brought yesterday, 2 P.M., in the last stage of Cholera, to the Native Hospital. He had been ill between eight or nine hours, and was in a state of extreme collapse, all arterial action having ceased. Died in the course of the night. A post-mortem examination of the body, seven hours after death, was made this morning.

Head. In removing the skull-cap, the vessels of the dura mater, which were lacerated, poured out a large quantity of dark venous blood; the veins of the pia mater were also very turgid, and indicated much congestion. On making a section of the brain, the red points in the medullary substance appeared very numerous; the amount of fluid in the lateral ventricles was small; the venæ magnæ Galeni were distended

by blood to the size of a common crow-quill; and the veins at the base of the brain were gorged with blood.

Thorax. The lungs were emphysematous, of a deep purple posteriorly, and exhibited some sanguineous engorgement. The pericardium being laid open, the right auricle and ventricle were relaxed, and filled by dark coagulated blood; left auricle empty, and left ventricle containing a small quantity of dark blood.

Abdomen. The intestines were greatly distended by flatus. The peritoneal coat of the stomach, at the pyloric end, was of an unnatural red tint; but on being laid open, the mucous coat seemed natural. The peritoneal coat of the duodenum, jejunum, and ileum, was generally abnormally red and vascular, but in parts of a dark purple. These intestines contained a small portion of dark mucous matter, streaked with blood, adhering to the villous coat. The mucous coat of the cæcum and colon was of a dark leaden colour. The liver seemed natural; but the gall-bladder was filled with black inspissated bile. The spleen presented nothing unusual.

The post-mortem appearances in the following illustrations were recorded by Dr. Morehead, now Professor of Medicine in the Grant Medical College at Bombay, and formerly my assistant at the European General Hospital.

Illustration v. William Taylor, aged 39 years, a man of dissipated habits, and no fixed employment, admitted into hospital at 4 P.M. on the 19th of March 1840. Had passed many rice-water-like stools, and vomited frequently before admission; tongue white; countenance sunken; voice and pulse feeble; skin quite cold. Died eight hours after admission. A necroscopic examination of the body was made eight hours after.

Head. The vessels of the membranes were turgid with blood, and the substance of the brain was of a rosy tint, and presented numerous bloody points. There was a veil of serum on the upper surface of the brain, and about an ounce at the base of the skull.

Thorax. The lungs, moderately collapsed, were somewhat congested with blood at the posterior parts. The coronary vessels of the heart were turgid with blood; and the cavities, chiefly of the right side, were distended with dark fluid blood.

Abdomen. The omentum and peritoneal coat of all the intestines had a deep blush of redness. The stomach, which was much distended, filled the left hypochondriac and epigastric regions, and part of the right hypochondrium, pushing the liver within the arch of the ribs. The mucous coat of the stomach was much mammillated, thickened, and pale in colour. There was no distension of the intestines, and the mucous coat of the small ones was of a rosy tint, presenting well developed villosities, but no enlarged glands. The mucous coat of the colon was pale, and its follicles not apparent.

Illustration vi. Simon Francis, seaman, aged 22 years, admitted at 5 P.M. on the 6th of April 1840. Had been passing frequent rice-water-like stools for more than an hour before admission, and had vomited several times; complained much of oppression at his chest, and pain in the epigastrium; countenance sunken; voice feeble; pulse scarcely perceptible; tongue white, and thirst urgent. Died in little more than nine hours from the commencement of the attack. A

necroscopic examination of the body was made twelve hours after death.

Head. The vessels of the membranes were turgid; and there was more than the usual quantity of effused serum in the ventricles and at the base of the brain. The substance of the brain was of a darker tint than usual, and presented many bloody points.

Thorax. The left lung was emphysematous, and the right one compressed by old adhesions. The venæ cavæ were filled with blood, but the heart was flaccid.

Abdomen. The peritoneal coat of the intestines had a light vermillion tint. The small intestines were filled with rice-water-like fluid. On these being laid open, the mucous coat at the end of the ileum was pale and studded with mucous glands, which stood in prominent relief, each white, and of the size of a mustard seed; the villi of the jejunum were distinct, and its mucous surface pale.

Illustration VII. John Paget, aged 47 years, admitted at 2 A.M. the 9th of April 1840, after having been ill for about six hours with vomiting, purging of watery stools, and cramps. Countenance not much sunken; skin damp and cold; pulse feeble. The cramps and purging ceased about an hour and a half after his admission; his respiration became greatly oppressed in an hour afterwards; and death followed at 5 A.M. on the same day, or ten hours from the commencement of the attack. A necroscopic examination of the body, six hours after death, revealed the following appearances.

General Appearance. Body stout and fat.

Head. There was moderate turgescence of the membranes of the brain, and many dotted red points were visible on incision of its substance; but there was no veil of serum on its convex surface.

Thorax. The lungs were anteriorly emphysematous, and posteriorly œdematous; the heart was loaded with fat, and its right auricle filled with blood.

Abdomen. There was a very faint blush of redness on the peritoneal coat of the intestines; the omentum was loaded with fat; and the liver was pale.

Illustration VIII. Lewis Simas, a pauper, aged 11 years, admitted the 16th of April 1840. Had been suffering from diarrhœa and vomiting for three days previous to admission; said that his abdomen was tender, and that he had been passing stools mixed with blood. Leeches to the abdomen, an opiate enema, and warm bath, were administered with relief: but on the 17th, he was severely attacked with vomiting and purging, and sank rapidly from collapse. A necroscopic examination of the body was made twelve hours after death.

General Appearances. Body of a slender form.

Head. There was much turgescence of the vessels of the membranes, and a very considerable amount of effused serum on the convex surface of the brain. The medullary substance was generally soft, and shewed many bloody points.

Thorax. The costal and pulmonary pleuræ were connected together by old adhesions, and the posterior part of both lungs was œdematous.

Abdomen. The liver was natural. The mucous coat of the stomach presented marbled red patches, but was firm in texture. The intestines

were somewhat distended, and their fluid contents were of a light grey colour. The patches of Peyer's glands, at the end of the ileum, were much developed. The mucous coat of the colon was of a light grey colour, and its follicles were not very distinct.

These individual illustrations of the anatomico-pathological appearances in Cholera, have been taken from cases of the disease as it appeared at various times in India. They were recorded without any preconceived notion or theory of the disease, likely to bias the mind in its observations; and having been detailed by different individuals (myself, and Dr. Morehead), must be allowed some weight, as the means of establishing or disproving questionable points of opinion on this head. They agree generally with the observations of M. Raiken, lately communicated to the Belgian Academy of Medicine; and do not bear out some of Dr. W. T. Gairdner's conclusions, "*that it is an error to conceive of congestion as an essential or universal condition in this disease.*" This remark is true, as it applies to the *liver, spleen,* and *kidneys*: the congested condition of the liver and kidneys being contingent on there having been little or no *exosmosis* from the intestinal exhalents and minute venous trunks of the portal vein. But, assuredly, *mechanical congestion* of other parts of the venous system, from the cessation of the endosmotic power of the lungs, is an essential condition of Cholera, and is manifested by the right side of the heart and venæ cavæ being loaded with blood, and by the cerebral veins and venous sinuses and vessels of the medulla spinalis being in the same state, greater or less, according to the smaller or greater amount of serous effusion that may have taken place from the vessels.

Post-mortem observations in Cholera cases are of acknowledged importance in studying the disease, in order to obtain a more exact knowledge of its nature, and an improved method of treatment: but, *pathological anatomy* not being *pathology*, if we would obtain a more comprehensive knowledge of the *series of morbid changes* which constitute this *most obscure* if *not incomprehensible* malady, we must study the *defects of the vital principle*, and *the diminished constitutional power of resistance against external agents, which precede and regulate* all the subsequent phenomena. It may be useful, however, and partly contribute to this most desirable investigation, as the foundation of a better therapeutic system, to give here a summary of the characteristic groups of morbid anatomical changes, in both solids and fluids, which distinguish Cholera from, or associate it with other diseases, to which it seems allied. The heads of this summary will be nearly those already given in Dr. Gairdner's valuable report referred to, with such emendations as seem necessary and are warranted by my own observation, and by the experience of others.

I. Effects of Previous Disease. The conclusion, that individuals of unsound constitution are not more liable to Cholera attacks than those in perfect health, requires a greater collection of anatomico-pathological facts, than that on which this statistical induction has been made, before its establishment can be admitted. It is in complete opposition to a well ascertained law of predisposition in this and other diseases—namely, that whatever has a tendency to render sanguification and nutrition defective, to pervert secretion and weaken the constitutional powers of

resistance to morbific causes, favours the production of Cholera collapse. Though many persons in perfect health were attacked by Cholera in 1848, under the strongly epidemic influence of the atmosphere then prevalent, yet the chief victims of the malady were the *aged, emaciated,* and *previously diseased.* The chronic lesions, found most influential in producing Cholera development, were those which impeded the due performance of the respiratory function; a conclusion fully borne out by the cases given in illustration.

II. Condition and Secretion of the Intestinal Canal. M. Raikem's observations on this head, are confirmed by those made in India. Where the amount of watery purging had been least, the mucous intestinal surface was coated with a thick layer of white creamy matter, associated with much hyperæmia of the membrane, visible after the mucous or fibrinous exudation had been removed. Sometimes the stomach and intestines contained large quantities of this whitish creamy matter, occasionally tinged with blood. Andral considers the fluid, which constitutes the rice-water-like stools of Cholera, to be only mucus secreted in large quantities and modified in its qualities; in which opinion Dr. Gairdner coincides. But Dr. Parkes, with well considered grounds for opinion, is disposed to consider *all the flocculent matter of the true Cholera stool, cells, dark yellow granules, fibres, flakes, and amorphous matter, to be but modifications of the same substance, viz., fibrine;* and that though the corpuscles seen in these Cholera masses may be mucus, yet *these fibres and flakes, in all respects chemical and microscopical, resemble those seen in the so-called inflammatory exudation matter; and it is in the highest degree probable, that they owe their origin to effused blood plasma, which assumes with great rapidity a low, ill-defined, and non-progressive organization.*[1] It is in all respects similar to the follicular deposit of typhoid fever, being a *diphtheritic exudation,*[2] similar to what is formed on the pharynx and tonsils, in certain morbid conditions of the blood, when its fibrine has lost its natural firmness and vital cohesion. It sometimes appears as an exudation of the *submucous tissue,* distending the *solitary* and *Peyerian glands,* so as to elevate them in patches; which yield, on section, a milky liquid, analogous to that found in the intestines, and noticed both by Drs. Gairdner and Raikem. The latter observed, the exudation generally confined to the *glandulæ solitariæ,* whose base was of a pearly white, and surrounded by a sort of areola of hyperæmiated arborescent vessels, with sometimes superficial ulceration at their summit. Dr. Gairdner describes the exudation as presenting itself in ecchymosed patches distinctly circumscribed, but of greater or less extent, and in tint varying from a claret colour or deepest purple to a greyish or leaden colour. The mucous membrane of the stomach and intestines was sometimes pale, but more frequently exhibited the scattered vascular portions in the sub-mucous cellular tissue, as already described.

III. Lungs. The lungs were sometimes collapsed and almost natural; but more frequently *voluminous and emphysematous;* of a dark purple

[1] Parkes on the Intestinal Discharges in Cholera, London Journal of Medicine for February 1849, before quoted.

[2] Edinburgh Monthly Journal for July 1849.

colour, and œdematous at the posterior parts; the right cavities of the heart and venæ cavæ greatly distended with blood, which Mr. Lizars, in thirteen cases, found in a state of fibrinous coagulum, and the left side of the heart containing only small quantities of the circulating fluid: appearances which do not certainly support M. Raikem's assertion, that there is no *asphyxia* or paralysis of the lungs in Cholera.

IV. Glandular Secretion. The glandular secretions, according to the incomplete investigations we yet possess on the subject, undergo alterations in quality, and are most probably diminished in quantity. The biliary secretion appears to be retained rather than suppressed; but, though apparently abundant in the gall bladder, it contains a large amount of mucous matter, and possibly morbid constituents; experiments being still requisite to determine this point. The gall-bladder has been found studded with highly-developed hyperæmiated vascular ramifications, and sometimes containing a large quantity of clear limpid fluid; indicating that its mucous coat is in the same low state of inflammatory organization as is met with in the intestinal mucous surface. The liver and spleen, however, have not presented the remarkable signs of active disease, met with among the anatomico-pathological appearances of *remittent fever*.

The state of the kidneys, in the Indian necroscopic examinations, was seldom attended to; but Dr. Gairdner's microscopic examinations of these organs are of the highest interest, more particularly when we connect his observations with the morbid state of the intestinal mucous surface as observed in Cholera. Dr. Gairdner says, *the kidneys, however, appeared in many cases to have undergone changes, the cortical substance being pale and turgid, and the tubuli uriniferi gorged with imperfectly developed epithelium, which was mostly loaded to an unusual extent with oleo-albuminous granules. A similar state of the kidneys occurs after scarlatina, and not unfrequently after typhus fever, and some other acute diseases.* This ascertained condition of the kidneys is, as it regards the condition of the blood, of the utmost importance in guiding us to a right understanding of the phenomena of Cholera. Dr. Garrod ascertained that the urea of the blood gradually increases in amount, from the cold stage to that of febrile reaction; and explains the phenomenon by supposing that, in intense and sudden collapse, the urinary excreting function and also the vital metamorphoses are diminished or suppressed, and therefore the formation of urea is likewise nearly suspended; but that when partial reaction ensues, and the vital changes take place with greater activity, urea must accumulate in the blood, if the function of the kidneys be not at the same time restored.

V. The Nervous System. The *spinal chord* was only examined by me in two cases, and in one only of these were the sympathetic ganglia, and substance of the medulla oblongata and medulla spinalis, noticed; they seemed somewhat more vascular than natural. Dr. Gairdner states that the sympathetic ganglia, and the pneumo-gastric nerves, were repeatedly examined; but nothing unusual, except, in a few cases, slight ecchymosis, was discovered. Well marked venous congestion of the substance of the brain, and of the cerebral membranes, was frequently present; in one case, softening of the cerebral substance; and, in most, copious serous effusion into the ventricles.

PATHOLOGICAL SUMMARY. Some further investigations on certain doubtful points, the chemical constituents of Cholera bile, and of the effused serosity into the brain and other cavities; more precise microscopic examinations of the state of the medulla oblongata, medulla spinalis, and ganglionic nerves; and a more extended series of chemical and microscopic observations on the conditions of the blood, its degrees of coagulation and fluidity, the tenacity of its fibrine, the ratio of its albumen and salts to the healthy standard and the appearance of the blood vesicles, seem yet necessary, before we can obtain a well established pathology and rational therapeutics of this disease. It is also of essential importance that authors state the stage of the disease, to which their observations refer. So far as our present investigations extend, they warrant us in adopting the following CONCLUSIONS.

1. That Cholera begins in a change by the blood, or morbid arrangement of its ultimate particles; by which a diminution or altered quality of its fibrine and normal ingredients takes place, impairing the formative and vital power of the circulating fluid.

2. That this altered condition of the blood, caused by unhealthy assimilation and improper food, *malarious influence*, damp ill-ventilated apartments, unhealthy exhalations from drains, and epidemic constitutions of the air, is generally manifested by certain low inflammatory exudations on the mucous surface of the stomach and intestines, accompanied by progressive, and sometimes sudden, loss of function in the nervous, respiratory, circulating, and secreting systems.

3. That the concatenation and succession of phenomena which mark the full development of a Cholera attack, consist of a depression of nervous power, a cessation of endosmotic function in the pulmonic cells, a state of congestion and arrest of the blood in the right cavities of the heart and veins, emphysema or œdema of the lungs, cyanosis and loss of animal heat, increased exosmotic exhalation from the mucous membrane of the alimentary canal and cutaneous surface, increasing carbonization of the blood and diminution of its quantity in the arterial system, suspension of the urinary secretion, and general *toxæmia*.

V. TREATMENT.

Cholera being, pathologically, a low inflammatory irritation of the mucous membrane of the alimentary canal, with deficiency of vital power in the blood to retain its fibrine in aggregation with the other elements, manifested generally by *premonitory diarrhœa*, consecutive cessation of endosmotic function in the pulmonic cells, and arrest of healthy fæcal secretion, the indications of cure are:—1. To allay irritation of the stomach and intestines, check the unhealthy intestinal secretion, and restore the natural action of the skin. 2. To support the powers of the nervous system and heart, and prevent congestion in the lower part of the brain and spinal marrow during the development of the second stage. 3. To promote and restore the biliary and urinary functions so as to eliminate *toxæmic* elements from the blood. 4. To moderate the violence of reaction, subdue cerebral and abdominal complications, equalize the general circulation, and restore tone to the system.

If the premonitory symptoms of the first stage be attended to, and timely treatment of these be adopted, by allaying irritation of the

mucous surface of the alimentary canal, restraining the diarrhœa, and restoring healthy perspiration to the skin, the symptoms of the next two stages, or developed Cholera, may be generally prevented. If the stomach be oppressed and loaded by undigested contents, it will be sometimes useful to relieve it by an emetic of mustard and warm water, or one of sulphate of zinc; but caution in the administration of emetics seems necessary, lest they increase the intestinal irritation, and add to that nervous depression which precedes the development of Cholera. Purgative remedies are, for this reason, yet more to be avoided in *Choleroid* diarrhœa, as I have known several individuals in India, who, on feeling oppressed and anxious under the indigestion and slight bowel derangements which precede Cholera, took nothing more than rhubarb, and were soon after attacked by symptoms of the second stage. Case II, which has been related, under the head of Cholera modifications, was of this kind. It is therefore advisable to fulfil the first indication by administering enemata of acetate of lead and tincture of opium,[1] giving a pill of sulphate of quinine and calomel combined with catechu or extract of logwood and a small proportion of opium, to be repeated every hour, or second hour, according to the urgency of the symptoms and the persistence of the diarrhœa. Under a conviction that *gastro-enteric inflammation*, in India, associated with *diarrhœa*, generally proceeded from *malaria*, and was an effect of the same diseased irritability, which gives rise to the phenomena of fever and Cholera, I employed, many years ago, the combination of quinine and calomel, in the treatment of this class of diseases, and with much advantage. The proportion of the quinine to the calomel given was greater or less, as the diarrhœa was more or less severe; but in many cases the calomel was omitted, and one grain of sulphate of iron and a quarter of a grain of opium to every four grains of sulphate of quinine, were beneficially substituted.

Dr. Cormack, of Putney, informs me that, acting on a suggestion which I made to him, now nearly twelve months ago, he has found the citrate of iron and quinine one of the most useful medicines which can be given in the *Cholerine*, now almost universal on the Surrey side of the river. In infantile cases the remittent type is commonly well marked; and in them, specially, the combination of this preparation with astringents is useful. In the severe spasmodic cases, with much intestinal irritation, Dr. Cormack has found the *camphor-chloroform mixture* of Messrs. Smith of signal advantage, in doses of from three to six minims,[2] repeated every two or three hours, according to the circumstances of the case. This medicine may be also usefully given in combination with the creasote mixture of the Edinburgh *Pharmacopœia*, to allay vomiting; and Dr. Cormack often combines the creasote mixture and camphor-chloroform mixture with catechu, or such other remedies as may be indicated. The administration of sulphate of quinine with camphor, in Cholera, has also been found useful by Dr. Lorimer, of the

[1] The French have found injections of nitrate of silver very efficacious; and though I have never used them in Cholera, I am disposed to recommend them, having found them useful in dysentery.

[2] *Edinburgh Monthly Journal* for November 1848; also, LONDON JOURNAL OF MEDICINE, for January 1849, p. 102.

Madras Medical Service; and M. Duchesne-Duparc, at Paris, has been lately recommending the former as a *prophylactic*, or rather a *curative*, for the disease. It is, doubtless, of great efficacy in preventing the depressing effects of *Choleroid* diarrhœa, and arresting the course of the disease. The patient should at the same time use a hot bath, at the temperature of 106° of Fahrenheit, be afterwards laid in bed, and have a large sinapism applied to the epigastrium. Milder cases do well under the use of sulphate of quinine and calomel pills; but when muscular debility is a prominent symptom, and the action of the patient's heart feeble, he should be bathed in the horizontal posture on a bed, by wrapping him in a sheet wrung out of warm water, then covering him with several blankets after the hydropathic fashion, applying warming-pans of hot water till warm perspiration appears; when the patient may be laid in a dry warm bed. The danger of such cases is from syncope being induced by over exertion or the upright posture while in the common warm bath, the evil consequences of which I often witnessed in the first epidemic Cholera seen by me in India, where people were scalded in the hot bath, without reflection that syncope, any way induced, proves fatal to the weak circulating system. Attention to the maintaining of the horizontal posture, the employment of enemata, and all freedom from exertion, is more necessary in the second stage than even the first. To fulfil the second indication, the patient should take the quinine, combined with any preparation of iron, camphor, and a small proportion of opium, along with a draught of bicarbonate and nitrate of potass dissolved in camphor mixture, with the addition of nitrous ether; to be repeated every hour. Small quantities of brandy, or gin, in cold soda or potass water, may be given for drink; and if the cramps of the extremities be severe, the limbs are to be *shampooed*, or bandaged in the manner recommended by Dr. French. Dry cupping at the base of the skull and cervical region, or the application of a large sinapism along the spine, and another on the epigastrium, will be useful in this stage of congestion, and also in the fully developed algide stage. Frictions of the limbs and chest with stimulating liniments, and the application of bags of hot sand, or bottles of hot water, to restore the animal heat, are of utility.

In making use of a combined tonic and stimulating mode of treatment, with diuretics to restore suppressed urinary secretion, we at once fulfil the second and third indications of the requisite treatment. The diuretics indeed may be advantageously used, in combination with the other remedies, from the beginning; but their action becomes more a principle of treatment in the *second* and *third* stages, when *toxæmic* elements have accumulated in the system, and have to be eliminated. In modified pyrexial cases, their utility is strongly indicated, during the temporary reaction, when urea is accumulating in the blood, destroying the nervous irritability of the heart and brain, and encouraging the venous congestion of these organs. It is in cases of this kind that a timely and judiciously employed bleeding from the arm may be of service in relieving the oppression of the heart and equalizing the circulation: but when resolved on, it should be performed while the patient is in the recumbent posture, and in the wet *cumlie*, or sheet, wrung out of scalding water. We may sometimes dispense with the use of the latter, particularly when there are symptoms of considerable toni-

city in the circulation, and of local inflammatory action in any organ. Stephen Dewer's case (p. 719) was one of this kind, in which *gastro-intestinal* symptoms were predominant, accompanied by temporary abdominal spasms, pain at the epigastrium, and pulmonic oppression, head-ache, and irregular reaction; where the excitement of various organs, following previous congestion, might be viewed as a necessary condition of their restoration to health. In such cases, as in fever, we have to equalize the circulation by remedies that give tone to the nervous, and reduce phlogosis in the circulating system. The good effect of *general* and *local* bleeding will be manifest on reference to the report of the 4th of July, when relief from cramps, and diminution of pulse followed the former; and again, when on the 8th, complete removal of epigastric tenderness was produced by the latter. In the premonitory stage of the disease, where so much good can be effected by medicine, the removal of patients from low, damp, affected localities, to higher and drier situations, where they breathe a drier and purer air, will materially aid in effecting a cure: for whether it be the relatively altered electrical state of the air to the condition of the human body, that produces such beneficial results, the efficacy of the change, in such cases, is at *least* undoubted.

Reaction, or the fulfilment of the fourth indication, must be treated on the principles applicable to varieties of fever. In thus endeavouring to introduce a rational system for the treatment of Cholera, on clear pathological principles, I have abstained from noticing the greater or less success of particular remedies, and the applicability of them to modifications of the disease; contenting myself by giving this brief outline of the treatment, on which I may probably enlarge when the present article is reprinted and published in a separate form.

27, Hyde Park Square, 17th August, 1849.

P.S. Since writing the above, I had an opportunity, (on the 22nd August), of seeing three cases of the disease, under the care of Dr. Cormack. One, an infant, was in a state of collapse, and died on the following day; another infant, in the same house, was passing into the same state, and died on the 25th. The third patient was an adult woman, who had been brought very low by the vomiting and purging. The symptoms on the day on which I saw her were precisely those of a pernicious ague: the danger of collapse seemed imminent; and there was almost total suppression of urine. She was judiciously treated by diuretics, stimulants, and a mixture of the citrate of iron and quinine. She is now convalescent. Dr. Cormack has sent me a very full account of the post-mortem appearances in the first fatal case; from which it appears that the deficiency of blood in every part of the body was most striking. The lungs were œdematous; the liver and kidneys pale; and the spleen was natural in size and consistence.

27th August.

BIBLIOGRAPHICAL RECORD.

Principles of Medicine: comprising General Pathology and Therapeutics, and a Brief General View of Etiology, Nosology, Semeiology, Diagnosis, Prognosis, and Hygienics. By Charles J. B. Williams, M.D., F.R.S. pp. 533. London: 1848.

(*Continued from* p. 744.)

Chapter IV treats of STRUCTURAL DISEASES, OR DISEASES OF NUTRITION, composed of ULTIMATE AND PROXIMATE ELEMENTS. These are arranged under the heads of *increased*, *diminished*, and *perverted* nutrition, in the following table.

ELEMENTS OF STRUCTURAL DISEASE.

- DISEASES OF NUTRITION
  - Increased = hypertrophy
  - Diminished = atrophy
  - Perverted
    - Induration
    - Softening
    - Transformation and degeneration
    - Deposits
      - Exoplastic
        - Cicatrices
        - False membranes
        - Cirrhosis
      - Cacoplastic
        - Fibro-cartilage
        - Grey tubercle
        - Atheroma, etc.
        - Yellow tubercle
      - Aplastic
        - Calcareous matter, etc.
    - Growths
      - Non-malignant
        - Cysts
        - Tumours
        - Hydatids, etc.
      - Malignant
        - Carcinoma
        - Encephaloma
        - Melanosis, etc.
- ALTERED MECHANISM
  - Contraction
  - Dilatation
  - Obstruction
  - Compression
  - Displacement
  - Rupture, etc.

The division here given is, however, Dr. Williams remarks, too precise to be rigidly applicable to many cases. "Lesions of nutrition often graduate into each other, and are very commonly combined: hypertrophy of some textures often co-existing with atrophy of others; perverted nutrition being often combined with excessive or defective; and several of these different changes often occurring in succession, in consequence of the operation of the same cause." (p. 355.) Our knowledge of structural diseases is as yet imperfect: much remains that is obscure in their nature and origin, and which can only be explained as we become better acquainted with the laws of nutrition. Yet we can already perceive in them an element of malnutrition, in which the vital process of development fails in one or more of its stages.

Increased nutrition, constituting HYPERTROPHY, as a disease, is always partial. It may be *simple*, affecting *individual textures* (an ultimate element); or *complex*, affecting *whole organs* composed of many textures, (a proximate element). Instances of both forms are given by Dr. Williams; and the treatment is shewn to consist chiefly in the removal of the pathological cause which induces it, whether congestion, determination of blood, or inflammation; and, whenever practicable, the exciting cause should be removed or counteracted. In some cases, remedies may be directly applied to reduce the size of the hypertrophied organ.

Diminished nutrition, or ATROPHY, may, unlike hypertrophy, be a general disease. The causes are divided by Dr. Williams into those which promote

decay, and those which impair or prevent reparatory nutrition. Among the former may be classed such causes as excessive exertion, want of sleep, extreme anxiety of mind, or continued suffering. Urea is present in excess in the urine. In marasmus also from excessive secretions or drains from the body, there is proof of accelerated decay; urea is increased in amount in diabetes mellitus. Fever and various acute diseases, attended with much excitement, also induce atrophy. The circumstances which impair or prevent reparatory nutrition are thus enumerated: "1. Defective quantity or innutritious quality of food; 2. Disorder of some part or parts of the digestive apparatus, such as extreme dyspepsia, diarrhœa, etc., which prevent the formation of chyle; 3. Diseased mesenteric glands or tumours obstructing the thoracic duct, intercepting the supply of chyle to the blood; 4. Perversion of the assimilating process by which chyle is converted into blood, as in diabetes mellitus and chylosus; 5. Defect in the formation of fibrin and albumen of the blood, the materials of nutrition, so that, instead of becoming the plastic material for repairing the texture, they have a tendency either to pass into decomposition, as in malignant fevers, or to concrete in a cacoplastic form, as in tuberculous diseases; 6. Excessive discharges of various animal fluids, of blood, pus, serum, milk, semen, mucus, etc.; or morbid growths, which monopolize the nourishment of the body, such as tumours of various kinds, particularly cancer; 7. Parasitical creatures, such as hydatids, worms, etc." (pp. 361-2.)

Partial atrophy is commonly produced by defective supply of blood to a part, arising sometimes from disease, sometimes from the changes induced by inflammation or other structural disease, especially when contractile cacoplastic matter is effused, as in cirrhosis of the liver and granular disease of the kidneys, the deposit compressing the vascular structure. Atrophy of other organs, as the heart and brain, is often found connected with ossification and partial obstruction of their arteries.

The *treatment* must be directed to obviate the cause, to supply proper and adequate nourishment, and to promote the healthy exercise of the digestive, circulatory, and assimilative functions. In the course of his remarks, Dr. Williams observes, that "in addition to a fair allowance of milk, butter, and fat in food, or instead of them where they disagree, the cod-liver oil is a valuable remedy in atrophy. It is most suited to scrofulous cases; but I have experienced its utility in convalescence from fevers, and from prolonged and wasting attacks of rheumatism." (p. 364.)

PERVERTED NUTRITION comprehends all those changes which go beyond mere degrees of *plus* and *minus* in the textures. In these, either the *quality* of the texture is altered, or some new texture, growth, or deposit, is superadded.

INDURATION and SOFTENING may both arise independently of inflammation. Induration is constituted by an increased deposit of solid matter in a structure, or by compression of that structure, or by both. In such cases there is probably prolonged determination of blood. Softening may arise from specific causes, as from defective deposition of phosphate of lime in the bones; from the action of the gastric juice on the stomach; from defect of fibrin in the blood; and in several cases of cachectic disease, usually with degeneration of the liver and kidneys, Dr. Williams has found a general softening of the textures, which presented a number of oil-globules. In other instances, softening is a variety of atrophy, the supply of blood being defective, either from ossification of arteries, paralysis, or, in some instances, from inflammation causing obstruction of the vessels. This result is promoted by a non-fibrinous state of the blood; and Dr. Williams judiciously remarks, that "it is a serious question whether the continuance of antiphlogistic measures and abstinence does not occasionally promote this consequence of the changes of inflammation. Some of the most distinct cases of softening of the heart and brain I have met with, have been those in which the patients have been long

kept in a reduced state, for fear of return of the inflammation of these organs." (p. 367.) And in the course of his remarks on the treatment of induration and softening (p. 368), Dr. Williams, in pointing out the indications to restore the plasticity of the blood in cases of non-specific softening, says: "The relief sometimes afforded to the symptoms of softening of the brain and heart, after all inflammation has ceased, by mild stimulants, tonics, and a moderately nourishing diet, is too little known to those who have always the fear of inflammation before their eyes, and who yet forget that a chief evil of inflammation is the injury it inflicts on function and structure, which injury often lasts when the inflammation is gone, or is of trivial amount." Besides stimulants and tonics, some agents seem to augment the plasticity of the blood, without having any remarkable tonic powers. These are the nitric and nitro-muriatic acids, and chlorate of potash; and these seem, in Dr. Williams' opinion, to act by supplying oxygen to the blood.

TRANSFORMATION OF TEXTURES usually implies DEGENERATION. The principal exceptions are the occasional transformation of skin into mucous membrane, and *vice versâ*, which result from changes of the physical conditions in which the membrane is placed. Muscle is sometimes transformed into, and when wounded is generally replaced by, a fibro-cellular texture. There are four kinds of degeneration of animal textures, which have very distinctive physical and chemical characters, viz., the *fibrous*, the *granular*, the *fatty*, and the *osseous* or *calcareous*.

Fibrous Degeneration is chiefly met with in muscular structures; and several of the parenchymatous organs sometimes present a similar change, though it is here rather to be considered as an additional deposit. This form of deposit tends to degenerate into the next form, the granular. This also is often the result of the effusion of encoplastic lymph; and frequently constitutes the first stage of the further degeneration into fatty or calcareous matter. It is a state intermediate between fibrous and fatty degeneration. When examined with the microscope, "the structure presents a remarkable increase of aggregated granules, with a corresponding diminution of the fibrous or filamentous tissue. The granules are not highly refractive, and there are no free oil-globules: in this respect it differs from fatty degeneration; neither is it so opaque or fragile as the true fatty atheroma." (p. 371.) Its chemical composition is probably gelatigenous or albuminous.

Fatty Degeneration is met with in the muscles, liver, and some other structures; and is to be distinguished from hypertrophy of the adipose tissue. It is strikingly exemplified in some forms of diseased liver; but Dr. Williams differs from the opinion of those who consider it to result here from the presence of bile in the process of formation; for if it were so, we should find it more constantly in phthisis, and other diseases of the lungs. He has observed it chiefly in females in whom maceration has proceeded very rapidly; and ascribes it rather to an arrest of the fatty matter taken into the blood during the rapid decay of the textures. It is evident, however, that it must in many cases arise from some chemical tendency in animal substances, independently of impairment of the function of any particular organ; and this view is favoured by a consideration of the circumstances under which it takes place. "As a *general* disorder, or *affecting many organs* at once, it occurs in connexion with a feeble circulation and low respiratory powers; and is favoured by circumstances which increase the hydrocarbon of the blood, whether they be the habitual indulgence in alcoholic stimulants and the like; or the imperfect removal of biliary matter from the system. An increase of fat, especially of cholesterin, has been observed in the blood of aged persons. Fatty degeneration affecting a *particular organ* (except in the peculiar case of the liver), is commonly a result of previous disease impairing the freedom of circulation through it, and often leaving a granular or other encoplastic deposit in its interstices, which not becoming fully organized, nor receiving the renovating and exhilating influence of the circulating blood, gradually passes

into a fatty condition, the lowest in the animal scale, and, in its not possessing azote, approaching to the plurality of vegetable matters. The same changes may result more gradually from the failing circulation and respiration which marks advancing age; and will be accelerated in any texture or organ, the structure of which has been injured by previous disease, accident, or disuse." (p. 374.)

The results arising from Fatty Degeneration are thus summed up: "Under whatever circumstances the fatty transformation occurs, it is obviously a process of degeneration, or degradation to a very low scale of animal or even vegetable life; (its occurrence in gangrene is a striking illustration of this point;) and both the vital and physical properties of the organs which it invades become lowered and otherwise injured. The muscles so degenerated lose much of their contractile power; and, if subjected to distension, as in the heart, become dilated, and may be ruptured. The tonic and elastic fibres of arteries also suffer in their spring-like properties, and may yield in pouches or become lacerated, or in process of time, petrified. Glands and secreting structures lose much of their secernent activity, and their cells, vessels, and ducts may be clogged or deranged by their fatty contents, especially when these assume the solid form. Parenchymata and interstitial tissues suffer in their properties of softness and cohesion, and in the freedom of their circulation, and become liable to the further changes of disintegration, and calcareous deposition." (pp. 374-5.)

Calcareous or Osseous Degeneration approximates the structure to the state of a mineral, and is to be considered as almost entirely a chemical process. The calcareous salt, phosphate of lime, is deposited in the interstices of the tissue, but has not any resemblance to the structure of bone, except accidentally in cartilages. It appears to be "the result of a chemical attraction of degenerating albumen for the phosphate of lime in the adjoining fluids." The petrifactive process is essentially slow, and occurs mostly in advanced age, though it may be induced at an earlier period, by chronic inflammation. The injuries which it inflicts on the structure and function of parts are obvious; rendering them rigid, inflexible, inextensible, inelastic, and therefore brittle and obstructive. Calcareous degeneration of a particular apparatus, as of the organs of respiration or circulation, is more liable to induce serious affections in young or middle-aged persons, in whom the other functions are not equally lowered; hence may occur spasmodic asthma and bronchial congestion, in connexion with ossified bronchial tubes; and angina may supervene on ossified valves or arteries. From these "the equally, but more completely or uniformly *petrified old man* may remain free, so long as he is kept in a state of vegetable, or almost mineral quiescence." Hence arises an indication for limited exertion.

The *treatment* of degeneration in general consists of means calculated to sustain the vitality of the frame, and to preserve the organic functions in a healthy state of activity. Pure air, regular exercise, and friction of the surface, warm or cold baths, and nutritious and carefully prepared food, are of the first importance. As medicinal agents, tonics may be of some little utility; but they often require to be combined with alterative aperients, and similar remedies, to restore the depraved and defective secretions. Congestion and inflammation must be carefully combated, chiefly by topical means. The remedies for each form of degeneration are concisely treated of, and their relative merits briefly pointed out.

Deposits in or upon textures result from an overflow of the nutritive material beyond what is necessary for the actual nutrition of the textures. They are classified by Dr. Williams under the heads of *emplastic, cacoplastic* and *aplastic*.

Emplastic deposits, or Cicatrices, may occur independently of inflammation; but a certain amount of well-fibrinized blood is necessary to supply the plastic material. The reparation of living texture, when cut or wounded, may

be effected in three ways: 1. By the growth together of the adjoining parts of the wound, as in fine punctures and incisions, and in larger wounds when irritation and inflammation are prevented; 2. By the medium of organizable lymph, or, more rarely, of a clot of blood, which becomes organized and forms a cicatrix; 3. By granulations and lymph together; this form is necessarily attended with inflammation.

The description of the formation of cicatrices given by Dr. Carpenter, in his *Human Physiology*, is quoted by Dr. Williams; who, with regard to the formation of the capillary vessels in the effused lymph, expresses his opinion that the oscillatory movements observed in the newly formed capillary vessels can only be those of the pulsation of the heart. Though the fibrin of coagulable blood has been found to become vascular, the colouring matter does not appear to assist in the process, but, in some instances, seems rather to retard or degrade it.

The *remedial measures* are such as promote a due determination of blood (whether it be called inflammation or not), and such a plastic condition of the blood as shall contribute to the effusion of a sufficient amount of organizable lymph.

CACOPLASTIC DEPOSITS arise from defective organizability of the effused lymph, or from some modification of the vessels of the part injured, or of their exudation, or from chronic and scrofulous inflammation of internal parts, and from congestion. Their most remarkable property is their tendency to contract: hence the puckering after burns, the indurated structure of the liver and kidneys in granular degeneration, the corrugation and contraction of the valves of the heart after thickening, etc. To this variety of nutrition Dr. Williams has devoted considerable attention. He remarks that their structure deserves to be more fully investigated. "They appear to possess some organization, being composed of irregular cells and fibres, with more or less granular or amorphous solid matter to complete their substance. They, however, exhibit various degrees of organization, some being vascular, and some not; but they are all inferior to the structure with which they are connected, and to euplastic deposits." (p. 385.) They are found, more or less, in almost all individuals, in proportion to the degradation which the nutrient function has undergone; and they take place in one organ more abundantly than in another, when it is predisposed by disease to suffer, as in granular degeneration of the liver or kidneys in persons of intemperate habits.

A further degradation of the nutritive material is exemplified in the *semi-transparent, miliary, grey, and tough yellow forms of tubercle*. We quote Dr. Williams' opinions on the nature of these deposits. "Instead of (with Laennec) classing tubercle under the vague term of 'accidental productions,' or (with Carswell) as a 'secretion *sui generis*,' I have for many years referred tubercle to a degraded condition of the nutritive material from which old textures are renewed, and new ones formed; and have held that it differs from fibrin or coagulable lymph, not in *kind*, but in *degree*, of vitality and capacity of organization. These views have received almost demonstrative confirmation in the microscopic researches of Mr. Gulliver and others, which have detected in tubercle the materials of lymph, but in a degenerated and confused state, the cells being few, irregular, shrivelled, with imperfect nuclei, and incapable of further development; no fibres being perceptible, and the main substance being composed of granular or amorphous matter. Every gradation may be found between euplastic and aplastic deposits; the cells and fibres which are the representatives of organization diminishing in number and completeness, and the material becoming more granular, amorphous, or abounding in fat globules, in proportion as the deposit is degraded, until, in opaque, crude, or yellow tubercle, it is altogether aplastic, consisting of a mere aggregation of granules and fat globules, with mere traces of the remains of cells. I consider that the more solid forms of tubercle are entitled to a place among cacoplastic deposits; because, although destitute of vascularity, the

seem to possess a kind of structure, like that of the lower kinds of fibro-cartilage and granular deposit. Their affinity with granular degeneration is shewn by their commonly occurring in the same subjects, and by their frequently exhibiting the same tendency to contraction. In a very large majority of cases of chronic granular disease of the kidneys or liver, there are found more or less traces of tubercle in the lungs, its chief seat: and in very few instances of chronic phthisis, have I failed to find some degree of granular disease in the liver or kidneys. In acute phthisis and acute granular disease, local causes accelerate the degenerative change to a destructive extent in one organ, before there is time for others to become affected." (pp. 386-7.)

The contractile property of cacoplastic deposits, as exemplified in false membranes, and in miliary tubercle, is probably due to the partial removal of the granular and amorphous portion of the deposits, and to the closer approximation of the fibres or more organized constituent. The effect of this is to raise the contractile deposit to a standard at which it is tolerated by the adjoining textures; but, at the same time, it contracts and compresses the vessels, interferes with nutrition and other functions, and often lays the foundation of serious disease. The common forms of tubercle, however, tend to become *aplastic*. False membranes and miliary tubercle are both at first effused in the granular form; but in the former the exuded matter is drawn or spread into threads or films by friction or pressure. In scrofulous and chronic inflammation, the granular character persists longer, in the effusions on serous membranes. Besides arising from inflammation, tubercles are often evidently the result of modified textural nutrition. "The cell-germs by which the material of textures is renewed, are imperfect at particular points; a granular or amorphous matter is deposited from the plasma, and concretes without fibres or regular cells being developed; at this point a granulation appears, and gradually hardens. Where a granule has once been formed, it becomes a nucleus for the concretion of more: a new habit or mode of nourishment is established at the spot; or, to speak less figuratively, cacoplastic matter (if present in the blood plasma) concretes around it by a process similar to that by which fat attracts fat, or bone osseous matter; perhaps the process is not wholly unlike that of crystallization. But however it happens, the result is, that the granular tubercle grows, and may attain the size of a millet-seed, hemp-seed, or even a small cherry-stone; or, being subjected to pressure, may slightly spread or flatten into various shapes." (pp. 391-2.)

The microscopic character of these tubercles is the great scarcity of fibres and cells, and complete preponderance of minute and often irregular granules, aggregated together by an amorphous material, soluble in acetic acid. Granular tubercle is albuminous, with some gelatine (probably the amorphous matter), and a very minute proportion of fat in the centre of some granules.

Aplastic Degeneration is often the result of a further change in the tubercular deposit, apparently the converse of the contractile process. The few fibres and cells found in grey tubercle become indistinct; the interstitial amorphous matter is replaced by oil-globules; and the mass becomes less adherent and more granular, constituting yellow or opaque tubercle. This change generally begins at the centre, being furthest removed from the influence of the blood. Here it results from a deficient supply of plasma; but an undue supply of blood, from congestion or inflammation in the vicinity, will also accelerate this change, by exalting chemical affinities in a structure whose vital powers are insufficient to resist them. Tubercle is frequently deposited at first in this yellow opaque form; and this is the commencement of a further change—that of maturation and softening into a cheesy substance. During this process, there is a remarkable increase of oil-globules, to which the researches of Mr. Gulliver and others have shewn there is a tendency in all degenerated plasma. This change is partly dependent on the extravascular position and low vitality of the tubercle; but in part also on the adjacent living structures. A miliary tubercle may cause irritation and inflammation, espe-

cially in parenchymatous structures. The effects vary according to the intensity of the excited hyperæmia. "Where the irritation is very slight, it may merely cause so much determination of blood as to promote the growth of the grey tubercle. Where it is more, it may cause the conversion of grey into yellow tubercle, its further increase in this form, and its softening. If the irritation be still greater, inflammation is excited around the tubercle; and its marks are often seen after death in the areolar or vascular redness; and the products of this inflammation (pus, lymph, mucus, serum, etc.) may also hasten the softening of the tubercle, their mixture together, and their evacuation by ulceration into adjoining open surfaces. Or, the product of inflammation being more solid and plastic, consolidations, or false membranes, are formed around the tubercle, and its irritating influence may be thus circumscribed." (p. 394.)

Another change which tubercles are sometimes observed to undergo, is that of calcareous conversion, analogous to the calcareous or osseous transformation of other textures. There seems to be a molecular deposition of the earthy substance, the animal matter being at the same time absorbed. This change is very commonly found in tubercles in the bronchial glands.

The circumstances which lead to the deposition of cacoplastic and aplastic matter, are described as local and general. It does not appear, however, that the local causes,—congestion and inflammation—are sufficient to induce the production of tubercle without the co-operation of a general cause—the degraded state of the plasma of the blood. This constitutes the chief element of the scrofulous diathesis or tuberculous cachexia, in which the red particles being deficient, and the fibrin in excess, there is an increased tendency to deposit fibrinous material, often in abundance, but endued with imperfect organizability. Such deposits must be greatly promoted by all kinds of hyperæmia; while even acute inflammation may be unequal to raise the nutritive material to a healthy plastic standard.

The greater liability of the lungs to tuberculous deposits does not appear to Dr. Williams to be dependent on the finer size of their capillary vessels, but on the following circumstances: "1. Their great vascularity, and the large quantity of blood that passes through them, which makes them largely partake of any disorder in the condition of this fluid. 2. Their being a chief seat of the formation of fibrin, that principle being more abundant in arterial than in venous blood. 3. The softness and yielding nature of their texture, which permits effusion to take place more readily than denser textures do. 4. Their exposure to external causes of disease, whether by cold and irritations directly entering by the air-tubes, or by circumstances operating through the medium of the circulation. In hot climates, cacoplastic diseases affect the liver and other abdominal viscera more than the lungs; the same persons there suffering from chronic liver disease and dysentery, who in a cold climate would fall victims to phthisis." (p. 398.)

The action of all acknowledged causes of tuberculous disease can be explained by their effect in inducing a cacoplastic state of the blood. Some, as insufficient food, want of pure dry air, of warmth, and of light, prolonged disease of the digestive organs, insufficient excretion, and the influence of fevers, etc., seem to induce a diminution of red particles and a preponderance of fibrin. Excessive evacuations of blood or the more animalized secretions, and severe courses of mercury, probably act by reducing the red particles, and the quality of the plasma. The cessation of growth, the termination of pregnancy, the amputation of a limb, or the suppression of habitual discharges, seem to increase the proportion of fibrin in the blood, when there is not a sufficient quantity of red particles—and therefore of vital power—to give the fibrin a due amount of elaboration and plasticity.

In the *treatment* of cacoplastic and aplastic deposits, the elements to be chiefly kept in view are: 1. *The disordered condition of the blood, and its causes.* 2. *The disordered distribution of the blood, and its causes.* 3. *The*

presence of the deposit, and its effects and changes. The first of these is the most constant and important; and we quote the remarks of Dr. Williams on the means of fulfilling the indications here presented. "The first point to be attempted is the removal or counteraction of the several causes before enumerated, as contributing to induce the diseased condition of the blood. Thus, a sufficient supply of food of a nutritive and digestible quality, comprising especially the highest order of proteinaceous articles, free access to a pure dry air and light, while the warmth of the body, particularly of the surface and extremities, is carefully secured by adequate clothing, and regular exercise proportioned to the strength, the removal or counteraction (so far as possible) of diseases impairing digestion and excretion, and of depressing mentally or bodily influences,—are among the first objects to be aimed at in treating cacoplastic diseases. Where excessive losses of blood or other evacuations have contributed to lower the plastic process of nutrition, a generous animal diet, and tonics, especially those containing iron, are especially indicated. Where the altered condition of the blood can be traced to an excess of ill-developed fibrin accumulating after the cessation of growth, the termination of pregnancy, the amputation of a limb, or the sudden stoppage of an habitual purulent or other discharge—means to eliminate the superfluous matter from the blood, either by increasing the natural secretions, or by establishing an artificial drain by blisters, setons, issues, suppurating counter-irritants, etc., are distinctly indicated; whilst tonic and invigorating measures may be also useful to raise the plasticity of the blood to a higher standard. Some of the remedies to be mentioned in relation to the third indication, are sometimes useful in promoting this object also, such as cod-liver oil, nitric acid, and combinations of iodine, which have direct influence on the nutritive functions." (p. 400-1.)

The second element indicates the remedies for hyperæmia in its various forms; but the utility of these is chiefly limited to remedies of a topical kind, of which none appear so useful as mild counter-irritants, or rubefacients, regularly applied by friction over a large surface of the body. They operate, not only as revulsives, but also "by increasing a free circulation on the surface, which promotes the purification of the blood by perspiratory excretion, and aids the lungs in the process of arterialization." With regard to the third object, that of promoting the removal or quiescence of the deposit already formed, Dr. Williams remarks that it is more difficult of attainment. It is doubtful whether we possess any means for promoting its removal, unless by the simultaneous destruction of the surrounding textures. Mercury appears to hasten the softening and evacuation of pulmonary tubercles; but Dr. Williams objects to its use in such cases, its operation being a work of destruction, and its influence on the blood injurious. He has used it with advantage, however, in cases of subacute and chronic inflammation, simulating tuberculous disease, and even when tubercle probably existed in a limited form; and in incipient cacoplastic or tuberculous deposits in serous membranes, especially the peritoneum. It is doubtful whether mercury is useful in granular disease of the liver or kidneys. Alkalies and their carbonates, and the iodide of potassium, in combination with some amylaceous or mucilaginous material, and some narcotic, appear more useful. Of these, Dr. Williams says: "Whether the iodine and alkali ever directly promote the solution or absorption of tuberculous matter, I am still in doubt; but the signs of the presence of limited tubercle have, in many instances, diminished during their use, and the patients have regained colour, flesh, and strength." The iodide of iron is often very beneficial in anæmia without much fever or local inflammation; but it does not appear to promote the removal of tubercle. To promote the solution or disintegration of tubercle, caustic alkalies, especially liquor potassæ, might be supposed to be of some benefit, by combining with the oily matter; but they cannot be received into the blood in sufficient quantity, and are unavoidably liable to enter into combination

with carbonic and other acids in the body. Acetic acid is liable to a similar objection. The utility of naphtha, oil of turpentine, tar, sulphuric ether, and similar remedies, in promoting the removal of tubercle, seems to Dr. Williams extremely doubtful. Naphtha has proved serviceable in his hands in a very limited number of cases, by checking profuse purulent secretion, and the cough, hectic, and wasting, accompanying it; but it has the disadvantage of often unduly checking expectoration, and exciting pain, tightness of the chest, and cough, resulting in inflammation or hæmorrhage. Fixed oils are more useful, and can be used in larger quantities; but most of them are apt to disagree with the digestive organs. Dr. Williams here notices the action of cod liver oil; but it is unnecessary for us to analyze his observations on this subject, as they have been presented to our readers in a more extended form in the first Number of this JOURNAL. It is probable that the more salutary of the changes in pulmonary tubercle, and the absorption of the more injurious part of the deposits, may be promoted by maintaining as free and excited a circulation near the affected parts, as can be carried on without inducing actual hyperæmia. "The more active circulation thus excited promotes the gradual solution of the deposits, chiefly by the oxidating current of arterial blood that it directs through their neighbourhood; and the inquiry naturally suggests itself,—can we aid this process of solution by means which oxygenate the blood more highly than can be done merely by free respiration of pure air? I have before surmised, that it is probable that such agents as nitric and nitro-muriatic acid and chlorate of potass, may contribute to this object; and I now mention them, because I have found their continued use beneficial in many cases after inflammation, in which circulation and absorption were slack, and cacoplastic effusions were accumulating and threatening mischief. So likewise in scrofulous and tuberculous disease, during the maturation and softening of the deposits, these oxygenating medicines sometimes produce decided improvement in the general and local symptoms. Their utility is limited by their tendency to irritate the alimentary canal when given largely or continued long; but they may commonly be advantageously used at intervals, when courses of cod-liver oil or of iron and other tonics are interrupted." (pp. 405-6.)

MORBID GROWTHS are next treated of, under the heads of Non-malignant and Malignant; but the concise and instructive remarks on these we are compelled, by want of space, to pass over. A short section is next devoted to the exemplification of the principal DISEASES OF MECHANISM.

Chapter V. is devoted to the CLASSIFICATION, SYMPTOMS, and DIAGNOSIS OF DISEASES, and commences with an explanation of the objects of NOSOLOGY. In the section on SEMEIOLOGY, Dr. Williams defines the term *sign* as implying generally anything by which the presence of disease may be made known; and *symptom*, as a phenomenon which becomes obvious in the course of disease, often proving to be a sign, but frequently of too uncertain connexion with a particular disease to be considered as such. He prefers the more specific designation of *physical signs* and *vital symptoms*.

Physical Signs are "those physical properties of the body, or of a part of it, which are perceptible to any of the senses of the observer." The power of determining the difference between the signs of health and those of disease, depends on our knowledge of the former; and this may be derived—"1. From general observation or experience of healthy standards; 2. From anatomical and physiological knowledge of what the state of health ought to be; or, 3. From a particular knowledge of the standard of health in any individual case." (p. 434.) A comparison of parts which are naturally symmetrical is a standard that is frequently available, as in the limbs or chest; but when organs are not symmetrically placed, as the liver, a previous knowledge of their natural structure, position, and physical properties, is necessary. We must also be acquainted with the healthy mechanism and functions of the organs of respiration, circulation, digestion, and excretion. It is important, also, to have a knowledge of physical laws: and on this point we quote Dr.

Williams' observations. "Physical signs are phenomena taking place in the body, in accordance with physical laws. It is therefore obvious, that a knowledge of these laws, as well as of the mechanism of the body, will assist us to interpret these phenomena; to explain of what they are signs, how they are caused, the variations which they may present, and the best mode of appreciating them. Thus, an aneurism of the arch of the aorta may be chiefly detected and studied through the physical signs which it produces. It forms a tumour under or near the top of the sternum, pulsating in a distinct manner, and with a peculiar sound; this tumour may press on the air-tubes in such a way as to alter their shape, and by partially obstructing the passage of the air through them, may also change the sound of breathing in a particular way: by compressing the veins, it may also throw their current into unusual sonorous vibration; or by a more complete obstruction, it may cause the veins to swell in a remarkable degree above the tumour; by its enlargement, the aneurism encroaches on the lungs, the walls of the chest, the muscles, nerves, bones, ligaments, etc., in such a way as to alter their physical properties and positions, and thus to produce various physical signs. Now, all these physical signs are phenomena produced in the altered mechanism, according to certain laws; and it is plain, that a knowledge of these laws must greatly assist us to understand the signs, and to trace them to their true causes. Nay, even the aneurismal tumour itself, in its production, increase, and intrinsic signs, can be rightly understood only through a knowledge of hydraulics and dynamics, in connexion with the structure of the heart and arteries in health and disease." (p. 436.)

Vital Symptoms are those phenomena which depend on the vital properties of a part or parts of the body. These properties, irritability, tonicity, sensibility, secretion, etc., and the more complex functions arising from their combination, produce, in a natural state, the symptoms of health; but when in excess, defect, or perversion, the symptoms of disease. Vital symptoms are also to be found in the state of the various functions of the body; for instance, valuable information is to be derived from the pulse, the skin, the tongue, and the alvine and urinary excretions. To understand the symptoms, an accurate acquaintance with the structure and functions of the healthy and diseased body is necessary; and the applicability of symptoms to semeiology and diagnosis will become more complete as our knowledge of physiology and pathology is advanced. In the mean time, their value must, in many cases, be determined empirically, by *the statistical* or *numerical* method; but here we should take care "that the number of observations be very large, that they should be applied to similar cases, and that the majorities which establish the rule should very greatly predominate over the exceptions." The importance of attending to the respective value of physical signs and vital symptoms, is clearly pointed out by Dr. Williams, who observes: "It is obvious that both classes of signs ought to be carefully taken into account; and the more fully the physical and vital properties which constitute them are understood, the more available will signs and symptoms be to instruct us as to the nature and treatment of disease." (p. 441.)

Diagnosis has for its object "to determine either the intimate nature and seat of a disease, or its name and place in a classification of phenomena, grouped under the name of special symptoms." (p. 442.) It should be, as far as possible, founded on pathology: but as this is imperfect, the numerical method must often be employed; and, in some instances, the causes and treatment of the disease give aid in the diagnosis. It may be *general or special*; the former comprehending the distinction between the principles or elements of disease; the latter relating to the distinction of diseases according to their chief seat, where they have one, or according to some other specific difference, where they have not. Special diagnosis often also follows and distinguishes diseases in their further differences of seat or character. Dr. Williams gives three problems illustrating the mode of investigating and distinguishing diseases in different cases. 1. "General pathology having

pointed out the general nature of a disease, it is required to determine its precise seat"; as in pneumonia. 2. "Previous history, prominent symptoms, or physical signs, having pointed out the seat of a disease, it is required to determine its nature"; as in the diagnosis of gastrodynia from gastritis. 3. "Symptoms being too few or too inconclusive to lead the diagnosis, both the seat and nature of a disease are to be determined"; this is a common case, and is exemplified in the diagnosis of symptomatic from typhoid fever. Thus is illustrated the importance of being acquainted with every department of medical knowledge. "Natural shrewdness and tact," says Dr. Williams, "with some general knowledge of the nature and treatment of disease, may sometimes enable a comparatively ignorant person to practise medicine with an appearance of success; but such a person can make no hand of diagnosis; and he wisely either evades the whole subject or expresses his opinions in vague terms, and scrupulously avoids their being brought to the test of the scalpel. The well-informed practitioner, on the other hand, feels that this is the subject which requires the full application of his mental powers and knowledge, as well as the keen exercise of his powers of observation; and, in proportion as his senses are practised in observing, his information well arranged in relation to what he observes, and his judgment matured in discriminating and deciding the results, so will he be successful in diagnosis, and in applying it to prognosis and practice." (p. 445.) In investigating the symptoms of a case, it is of importance to attend to the *aspect* of the patient, to become acquainted with his *previous history*, both in health and disease, and with the *cause and mode of commencement and progress of the present attack*. In investigating the present state and symptoms, *all* the functions of the body, whether stated or not by the patient to be diseased, must be made severally the objects of careful examination. The object of this is "not merely to determine the particular disease under which the patient labours, but to discover what is healthy as well as what is morbid in his condition. The prognosis, or estimation of the amount and event of the disease, and the application of treatment, require this full investigation. We have to consider, not merely *disease in the body*, but *the body in disease*;" and it is by losing sight of this great practical axiom, that minute or microscopic inquirers, who may be singularly successful in special diagnosis, signally fail in prognosis and in practice." (p. 446.)

Chapter VI is devoted to Prognosis, or Foreknowledge of the Results of Disease. After some instructive observations on empirical and rational prognosis, Dr. Williams enumerates, with examples, the circumstances from which a rational prognosis may be formed. These relate partly to the patient, and partly to the disease; and are,—the age, sex, temperament, previous and present diseases, and previous habits of the patient, with his condition at the time of the attack; the cause of the disease, its situation and nature, extent and progress, and the character of its symptoms.

The chief modes of DEATH are thus enumerated:—

Death (cessation of function) beginning at the heart { Sudden = syncope. / Gradual = asthenia.
beginning at the breathing apparatus = Asphyxia or apnœa.
beginning at the brain = Coma.
beginning at the medulla = Paralysis.
beginning in the blood = Necræmia (νεκρός, *dead*; αἷμα, *blood*.)

Death by CARDIAC SYNCOPE may occur either—1. By the heart losing its irritability, and ceasing to contract; or—2. By its being affected with tonic spasm so as to remain rigidly contracted. In the former case, the heart is distended with blood; in the latter it is contracted and empty, and this state was long mistaken for concentric hypertrophy, till its true nature was pointed out by Cruveilhier and Dr. G. Budd. Both these arise from somewhat similar causes. Death by ASTHENIA is the mode of termination of many diseases which exhaust the strength, without directly interfering with the more vital functions. The symptoms of this mode of death, as well as by ASPHYXIA, COMA,

and PARALYSIS, are ably and lucidly described. The last form mentioned is death by NECRÆMIA, in which the chief and most remarkable change is exhibited by the blood. This occurs especially in typhoid and other malignant and pestilential fevers, in which the presence of blood-disease is indicated by petechiæ and vibices, internal hæmorrhages, the fluidity of the blood, and its frequent unusually dark colour and tendency to pass into decomposition. We quote Dr. Williams' vivid description of this mode of death in its most marked form: "The blood, the natural source of life to the whole body, is itself dead, and spreads death instead of life. Almost simultaneously, the heart loses its power, the pulse becoming very weak, frequent, and unsteady; the vessels lose their tone, especially the capillaries of the most vascular organs, and congestions occur to a great amount; the brain becomes inactive, and stupor ensues; the medulla is torpid, and the powers of respiration and excretion are imperfect; voluntary motion is almost suspended; secretions fail; molecular nutrition ceases; and at a rate much more early than in other modes of death, *molecular* death follows close on *somatic* death—that is, structures die and begin to run into decomposition as soon as the pulse and breath have ceased; nay, a partial change of this kind may even precede the death of the whole body (somatic death—Dr. Prichard); and the fœtid aphthous patches in the throat, the offensive colliquative diarrhœa of persons in the last stage of various fatal diseases; parts running into gangrene, as in the carbuncle of plague, the sphacelous throat of malignant scarlatina, and the sloughy sores of the worst forms of typhus, and in the large intestines in dysentery, or the putrid odour exhaled even before death by the bodies of those who are the victims of similar pestilential diseases,—are so many proofs of the early triumph of dead over vital chemistry." (p. 466.) This is an extreme case; but many lower degrees arise from endemic, epidemic, and infectious influences, certain animal and vegetable poisons, as that of the most venomous reptiles and fungi, and probably some mineral poisons, as sulphuretted hydrogen, selenium, and, in part of its operations, arsenic. These may at once produce death; or the vital powers may react in various degrees. This reaction may be successful in removing the poison; but it may also induce serious organic mischief, and some other form of death. A due state of activity of the excreting organs is often beneficial in carrying off the offending matter, when it is small in amount; and it is those persons in whom the functional activity of these organs is impaired, that are the worst subjects for blood-diseases. Necræmia may also originate within the body, from causes which, in a more limited degree, would induce cachæmia. The general symptoms of death by necræmia are commonly of the class called typhoid, putrid, or malignant. They are thus enumerated: "a congested appearance of the whole surface, the colour being dusky or livid, and extending to the conjunctivæ, tongue, and fauces; various slight exanthematous or papular patches on the skin, often with petechiæ; more extensive hæmorrhages in form of ecchymoses, or oozing of thin bloody fluid from the gums, nostrils, and sometimes from other passages; extreme prostration of strength, with an obtuse state of all the senses and mental faculties, sometimes combined with delirium and twitchings of the limbs; half-closed eyes and dilated pupils; a very frequent, weak, and soft pulse; frequent and unequal respiration; no appetite; intense thirst; a dry, brown tongue, with dark sordes on the lips and teeth; a progressive fall of temperature, which may have been elevated at first; often cold, clammy, and fœtid perspiration; hiccup; subsultus tendinum; scanty, offensive urine; involuntary discharges." (p. 468.)

We had intended to complete this notice of Dr. Williams' *Principles of Medicine* in the present number; but we find that the attempt would prevent us from doing justice to the valuable chapter on HYGIENICS, which next follows. We therefore defer the conclusion of our analysis.

(To be continued.)

DICTIONARY OF PRACTICAL MEDICINE: comprising General Pathology, the Nature and Treatment of Diseases, Morbid Structures, and the Disorders especially incidental to Climates, to the Sea, and to the Different Epochs of Life; with numerous Prescriptions for the Medicines recommended; a Classification of Diseases according to Pathological Principles; a copious Bibliography, with references; and an Appendix of approved Formulæ; the whole forming a Library of Pathology and Practical Medicine, and a Digest of Medical Literature. By JAMES COPLAND, M.D., F.R.S. Parts xiii and xiv. London: 1849.

In the Parts we have now before us, we find articles extending, in alphabetical order, from Poisons to Schirrhous Tumours: and when we say that they are of such a character as to justify the description of the work which we have just quoted from the title-page, we have awarded praise of no ordinary kind. Dr. COPLAND is indeed one of the most remarkable of living authors; he not only brings to bear upon his subjects a vast—we had almost said an excessive—amount of erudition, but he illuminates and brings home all this learning to the mind of the reader, by the soundness with which he applies his personal experience. For one author, single-handed, to have undertaken this comprehensive Dictionary of Practical Medicine, is not remarkable; for perhaps there are many who think they could do it as well as, or even better than, Dr. Copland: but no one who understands the magnitude of the labour, can collate this work with others of a similar kind, without being astonished at its general excellence, and its pervading superiority.

It would be misplaced, even were it possible, to introduce in this place anything like a critical analysis of the different articles; for they themselves may truly be regarded as analytical digests of the best researches on each subject.

We are somewhat surprised to observe, that "SCARLATINA RHEUMATICA, or Eruptive Articular Fever" is described as a distinct disease, the product of a different morbid poison from Scarlet Fever. We have always regarded rheumatic scarlet fever as a mere variety of the disease; and we think, that during the late epidemic, this fact must have become pretty evident to all who were in the habit of seeing Scarlatina from day to day, in its progress through families and districts. In the same family, under the same roof—and, we are constrained to believe, arising from the same contagion—we have seen cases attended with the most intense articular rheumatism, occurring along with others, in which there were either no rheumatic symptoms at all, or in which they were trifling, when compared with those depending on the state of the throat, etc. There is one circumstance, however, in our experience which, in the opinion of some, may disconnect the two affections; and that is, the modification which the rheumatic tendency seems to exert upon the eruption. It generally consists of red blotches, mingled with large patches of urticaria, and is most abundant over, and in the vicinity of the joints. This was the character of the eruption in all our severe rheumatic cases; but we are not aware that this distinction has been pointed out by authors as existing between rheumatic and non-rheumatic cases of scarlet fever, although the relation which exists between urticaria and rheumatism is generally recognized.

FIRST PRINCIPLES OF MEDICINE. By ARCHIBALD BILLING, M.D., A.M., F.R.S. Fifth Edition, revised and improved. London: 1849.

The high reputation which Dr. BILLING'S work on the Principles of Medicine has long sustained, and the lengthened notice we are in the course of giving of Dr. C. J. B. Williams' book on the same subject, renders it unnecessary to furnish an analysis of the former. While, however, we acknowledge its merit, as setting forth the views which the author has been led to entertain from a lengthened clinical experience, we think that the work might be ren-

into a fatty condition, the lowest in the animal scale, and, in its not possessing azote, approaching to the plurality of vegetable matters. The same changes may result more gradually from the failing circulation and respiration which marks advancing age; and will be accelerated in any texture or organ, the structure of which has been injured by previous disease, accident, or disuse." (p. 374.)

The results arising from Fatty Degeneration are thus summed up: "Under whatever circumstances the fatty transformation occurs, it is obviously a process of degeneration, or degradation to a very low scale of animal or even vegetable life; (its occurrence in gangrene is a striking illustration of this point;) and both the vital and physical properties of the organs which it invades become lowered and otherwise injured. The muscles so degenerated lose much of their contractile power; and, if subjected to distension, as in the heart, become dilated, and may be ruptured. The tonic and elastic fibres of arteries also suffer in their spring-like properties, and may yield in pouches or become lacerated, or in process of time, petrified. Glands and secreting structures lose much of their secernent activity, and their cells, vessels, and ducts may be clogged or deranged by their fatty contents, especially when these assume the solid form. Parenchymata and interstitial tissues suffer in their properties of softness and cohesion, and in the freedom of their circulation, and become liable to the further changes of disintegration, and calcareous deposition." (pp. 374-5.)

Calcareous or Osseous Degeneration approximates the structure to the state of a mineral, and is to be considered as almost entirely a chemical process. The calcareous salt, phosphate of lime, is deposited in the interstices of the tissue, but has not any resemblance to the structure of bone, except accidentally in cartilages. It appears to be "the result of a chemical attraction of degenerating albumen for the phosphate of lime in the adjoining fluids." The petrifactive process is essentially slow, and occurs mostly in advanced age, though it may be induced at an earlier period, by chronic inflammation. The injuries which it inflicts on the structure and function of parts are obvious; rendering them rigid, inflexible, inextensible, inelastic, and therefore brittle and obstructive. Calcareous degeneration of a particular apparatus, as of the organs of respiration or circulation, is more liable to induce serious affections in young or middle-aged persons, in whom the other functions are not equally lowered: hence may occur spasmodic asthma and bronchial congestion, in connexion with ossified bronchial tubes; and angina may supervene on ossified valves or arteries. From these "the equally, but more completely or uniformly *petrified old man* may remain free, so long as he is kept in a state of vegetable, or almost mineral quiescence." Hence arises an indication for limited exertion.

The *treatment* of degeneration in general consists of means calculated to sustain the vitality of the frame, and to preserve the organic functions in a healthy state of activity. Pure air, regular exercise, and friction of the surface, warm or cold baths, and nutritious and carefully prepared food, are of the first importance. As medicinal agents, tonics may be of some little utility; but they often require to be combined with alterative aperients, and similar remedies, to restore the depraved and defective secretions. Congestion and inflammation must be carefully combated, chiefly by topical means. The remedies for each form of degeneration are concisely treated of, and their relative merits briefly pointed out.

Deposits in or upon textures result from an overflow of the nutritive material beyond what is necessary for the actual nutrition of the textures. They are classified by Dr. Williams under the heads of *cephalic*, *encephaloic* and *aplastic*.

Encephaloid deposits, or Cancerous, may occur independently of inflammation; but a certain amount of well-fibrinized blood is necessary to supply the plastic material. The reparation of living texture, when cut or wounded, may

be effected in three ways; 1. By the growth together of the adjoining parts of the wound, as in fine punctures and incisions, and in larger wounds when irritation and inflammation are prevented; 2. By the medium of organizable lymph, or, more rarely, of a clot of blood, which becomes organized and forms a cicatrix; 3. By granulations and lymph together; this form is necessarily attended with inflammation.

The description of the formation of cicatrices given by Dr. Carpenter, in his *Human Physiology*, is quoted by Dr. Williams; who, with regard to the formation of the capillary vessels in the effused lymph, expresses his opinion that the oscillatory movements observed in the newly formed capillary vessels can only be those of the pulsation of the heart. Though the fibrin of coagulable blood has been found to become vascular, the colouring matter does not appear to assist in the process, but, in some instances, seems rather to retard or degrade it.

The *remedial measures* are such as promote a due determination of blood (whether it be called inflammation or not), and such a plastic condition of the blood as shall contribute to the effusion of a sufficient amount of organizable lymph.

CACOPLASTIC DEPOSITS arise from defective organizability of the effused lymph, or from some modification of the vessels of the part injured, or of their exudation, or from chronic and scrofulous inflammation of internal parts, and from congestion. Their most remarkable property is their tendency to contract: hence the puckering after burns, the indurated structure of the liver and kidneys in granular degeneration, the corrugation and contraction of the valves of the heart after thickening, etc. To this variety of nutrition Dr. Williams has devoted considerable attention. He remarks that their structure deserves to be more fully investigated. "They appear to possess some organization, being composed of irregular cells and fibres, with more or less granular or amorphous solid matter to complete their substance. They, however, exhibit various degrees of organization, some being vascular, and some not; but they are all inferior to the structure with which they are connected, and to euplastic deposits." (p. 385.) They are found, more or less, in almost all individuals, in proportion to the degradation which the nutrient function has undergone; and they take place in one organ more abundantly than in another, when it is predisposed by disease to suffer, as in granular degeneration of the liver or kidneys in persons of intemperate habits.

A further degradation of the nutritive material is exemplified in the *semi-transparent, miliary, grey, and tough yellow forms of tubercle*. We quote Dr. Williams' opinions on the nature of these deposits. "Instead of (with Laennec) classing tubercle under the vague term of 'accidental productions,' or (with Carswell) as a 'secretion *sui generis*,' I have for many years referred tubercle to a degraded condition of the nutritive material from which old textures are renewed, and new ones formed; and have held that it differs from fibrin or coagulable lymph, not in *kind*, but in *degree*, of vitality and capacity of organization. These views have received almost demonstrative confirmation in the microscopic researches of Mr. Gulliver and others, which have detected in tubercle the materials of lymph, but in a degenerated and confused state, the cells being few, irregular, shrivelled, with imperfect nuclei, and incapable of further development; no fibres being perceptible, and the main substance being composed of granular or amorphous matter. Every gradation may be found between euplastic and aplastic deposits; the cells and fibres which are the representatives of organization diminishing in number and completeness, and the material becoming more granular, amorphous, or abounding in fat globules, in proportion as the deposit is degraded, until, in opaque, crude, or yellow tubercle, it is altogether aplastic, consisting of a mere aggregation of granules and fat globules, with mere traces of the remains of cells. I consider that the more solid forms of tubercle are entitled to a place among cacoplastic deposits; because, although destitute of vascularity, the

seem to possess a kind of structure, like that of the lower kinds of fibro-cartilage and granular deposit. Their affinity with granular degeneration is shewn by their commonly occurring in the same subjects, and by their frequently exhibiting the same tendency to contraction. In a very large majority of cases of chronic granular disease of the kidneys or liver, there are found more or less traces of tubercle in the lungs, its chief seat: and in very few instances of chronic phthisis, have I failed to find some degree of granular disease in the liver or kidneys. In acute phthisis and acute granular disease, local causes accelerate the degenerative change to a destructive extent in one organ, before there is time for others to become affected." (pp. 386-7.)

The contractile property of cacoplastic deposits, as exemplified in false membranes, and in miliary tubercle, is probably due to the partial removal of the granular and amorphous portion of the deposits, and to the closer approximation of the fibres or more organized constituent. The effect of this is to raise the contractile deposit to a standard at which it is tolerated by the adjoining textures; but, at the same time, it contracts and compresses the vessels, interferes with nutrition and other functions, and often lays the foundation of serious disease. The common forms of tubercle, however, tend to become *aplastic*. False membranes and miliary tubercle are both at first effused in the granular form; but in the former the exuded matter is drawn or spread into threads or films by friction or pressure. In scrofulous and chronic inflammation, the granular character persists longer, in the effusions on serous membranes. Besides arising from inflammation, tubercles are often evidently the result of modified textural nutrition. "The cell-germs by which the material of textures is renewed, are imperfect at particular points; a granular or amorphous matter is deposited from the plasma, and concretes without fibres or regular cells being developed; at this point a granulation appears, and gradually hardens. Where a granule has once been formed, it becomes a nucleus for the concretion of more: a new habit or mode of nourishment is established at the spot; or, to speak less figuratively, cacoplastic matter (if present in the blood plasma) concretes around it by a process similar to that by which fat attracts fat, or bone osseous matter; perhaps the process is not wholly unlike that of crystallization. But however it happens, the result is, that the granular tubercle grows, and may attain the size of a millet-seed, hemp seed, or even a small cherry-stone; or, being subjected to pressure, may slightly spread or flatten into various shapes." (pp. 391-2.)

The microscopic character of these tubercles is the great scarcity of fibres and cells, and complete preponderance of minute and often irregular granules, aggregated together by an amorphous material, soluble in acetic acid. Granular tubercle is albuminous, with some gelatine (probably the amorphous matter), and a very minute proportion of fat in the centre of some granules.

Aplastic Degeneration is often the result of a further change in the tubercular deposit, apparently the converse of the contractile process. The few fibres and cells found in grey tubercle become indistinct; the interstitial amorphous matter is replaced by oil-globules; and the mass becomes less adherent and more granular, constituting yellow or opaque tubercle. This change generally begins at the centre, being furthest removed from the influence of the blood. Here it results from a deficient supply of plasma; but an undue supply of blood, from congestion or inflammation in the vicinity, will also accelerate this change, by exalting chemical affinities in a structure whose vital powers are insufficient to resist them. Tubercle is frequently deposited at first in this yellow opaque form; and this is the commencement of a further change—that of maturation and softening into a cheesy substance. During this process, there is a remarkable increase of oil-globules, to which the researches of Mr. Gulliver and others have shewn there is a tendency in all degenerated plasma. This change is partly dependent on the extravascular position and low vitality of the tubercle; but in part also on the adjacent living structures. A miliary tubercle may cause irritation and inflammation, espe-

cially in parenchymatous structures. The effects vary according to the intensity of the excited hyperæmia. "Where the irritation is very slight, it may merely cause so much determination of blood as to promote the growth of the grey tubercle. Where it is more, it may cause the conversion of grey into yellow tubercle, its further increase in this form, and its softening. If the irritation be still greater, inflammation is excited around the tubercle; and its marks are often seen after death in the areolar or vascular redness: and the products of this inflammation (pus, lymph, mucus, serum, etc.) may also hasten the softening of the tubercle, their mixture together, and their evacuation by ulceration into adjoining open surfaces. Or, the product of inflammation being more solid and plastic, consolidations, or false membranes, are formed around the tubercle, and its irritating influence may be thus circumscribed." (p. 394.)

Another change which tubercles are sometimes observed to undergo, is that of calcareous conversion, analogous to the calcareous or osseous transformation of other textures. There seems to be a molecular deposition of the earthy substance, the animal matter being at the same time absorbed. This change is very commonly found in tubercles in the bronchial glands.

The circumstances which lead to the deposition of cacoplastic and aplastic matter, are described as local and general. It does not appear, however, that the local causes,—congestion and inflammation—are sufficient to induce the production of tubercle without the co-operation of a general cause—the degraded state of the plasma of the blood. This constitutes the chief element of the scrofulous diathesis or tuberculous cachexia, in which the red particles being deficient, and the fibrin in excess, there is an increased tendency to deposit fibrinous material, often in abundance, but endued with imperfect organizability. Such deposits must be greatly promoted by all kinds of hyperæmia; while even acute inflammation may be unequal to raise the nutritive material to a healthy plastic standard.

The greater liability of the lungs to tuberculous deposits does not appear to Dr. Williams to be dependent on the finer size of their capillary vessels, but on the following circumstances: "1. Their great vascularity, and the large quantity of blood that passes through them, which makes them largely partake of any disorder in the condition of this fluid. 2. Their being a chief seat of the formation of fibrin, that principle being more abundant in arterial than in venous blood. 3. The softness and yielding nature of their texture, which permits effusion to take place more readily than denser textures do. 4. Their exposure to external causes of disease, whether by cold and irritations directly entering by the air-tubes, or by circumstances operating through the medium of the circulation. In hot climates, cacoplastic diseases affect the liver and other abdominal viscera more than the lungs; the same persons there suffering from chronic liver disease and dysentery, who in a cold climate would fall victims to phthisis." (p. 398.)

The action of all acknowledged causes of tuberculous disease can be explained by their effect in inducing a cacoplastic state of the blood. Some, as insufficient food, want of pure dry air, of warmth, and of light, prolonged disease of the digestive organs, insufficient excretion, and the influence of fevers, etc., seem to induce a diminution of red particles and a preponderance of fibrin. Excessive evacuations of blood or the more animalized secretions, and severe courses of mercury, probably act by reducing the red particles, and the quality of the plasma. The cessation of growth, the termination of pregnancy, the amputation of a limb, or the suppression of habitual discharges, seem to increase the proportion of fibrin in the blood, when there is not a sufficient quantity of red particles—and therefore of vital power—to give the fibrin a due amount of elaboration and plasticity.

In the *treatment* of cacoplastic and aplastic deposits, the elements to be chiefly kept in view are: 1. *The disordered condition of the blood, and its causes.* 2. *The disordered distribution of the blood, and its causes.* 3. *The*

presence of the deposit, and its effects and changes. The first of these is the most constant and important; and we quote the remarks of Dr. Williams on the means of fulfilling the indications here presented. "The first point to be attempted is the removal or counteraction of the several causes before enumerated, as contributing to induce the diseased condition of the blood. Thus, a sufficient supply of food of a nutritive and digestible quality, comprising especially the highest order of proteinaceous articles, free access to a pure dry air and light, while the warmth of the body, particularly of the surface and extremities, is carefully secured by adequate clothing, and regular exercise proportioned to the strength, the removal or counteraction (so far as possible) of diseases impairing digestion and excretion, and of depressing mentally or bodily influences,—are among the first objects to be aimed at in treating cacoplastic diseases. Where excessive losses of blood or other evacuations have contributed to lower the plastic process of nutrition, a generous animal diet, and tonics, especially those containing iron, are especially indicated. Where the altered condition of the blood can be traced to an excess of ill-developed fibrin accumulating after the cessation of growth, the termination of pregnancy, the amputation of a limb, or the sudden stoppage of an habitual purulent or other discharge—means to eliminate the superfluous matter from the blood, either by increasing the natural secretions, or by establishing an artificial drain by blisters, setons, issues, suppurating counter-irritants, etc., are distinctly indicated; whilst tonic and invigorating measures may be also useful to raise the plasticity of the blood to a higher standard. Some of the remedies to be mentioned in relation to the third indication, are sometimes useful in promoting this object also, such as cod-liver oil, nitric acid, and combinations of iodine, which have direct influence on the nutritive functions." (p. 400-1.)

The second element indicates the remedies for hyperæmia in its various forms; but the utility of these is chiefly limited to remedies of a topical kind, of which none appear so useful as mild counter-irritants, or rubefacients, regularly applied by friction over a large surface of the body. They operate, not only as revulsives, but also "by increasing a free circulation on the surface, which promotes the purification of the blood by perspiratory excretion, and aids the lungs in the process of arterialization." With regard to the third object, that of promoting the removal or quiescence of the deposit already formed, Dr. Williams remarks that it is more difficult of attainment. It is doubtful whether we possess any means for promoting its removal, unless by the simultaneous destruction of the surrounding textures. Mercury appears to hasten the softening and evacuation of pulmonary tubercles; but Dr. Williams objects to its use in such cases, its operation being a work of destruction, and its influence on the blood injurious. He has used it with advantage, however, in cases of subacute and chronic inflammation, simulating tuberculous disease, and even when tubercle probably existed in a limited form; and in incipient encoplastic or tuberculous deposits in serous membranes, especially the peritoneum. It is doubtful whether mercury is useful in granular disease of the liver or kidneys. Alkalies and their carbonates, and the iodide of potassium, in combination with some amylaceous or mucilaginous material, and some narcotic, appear more useful. Of these, Dr. Williams says: "Whether the iodine and alkali ever directly promote the solution or absorption of tuberculous matter, I am still in doubt; but the signs of the presence of limited tubercle have, in many instances, diminished during their use, and the patients have regained colour, flesh, and strength." The iodide of iron is often very beneficial in anæmia (without much fever or local inflammation); but it does not appear to promote the removal of tubercle. To promote the solution or disintegration of tubercle, caustic alkalies, especially liquor potassæ, might be supposed to be of some benefit, by combining with the oily matter; but they cannot be received into the blood in sufficient quantity, and are unavoidably liable to enter into combination

with carbonic and other acids in the body. Acetic acid is liable to a similar objection. The utility of naphtha, oil of turpentine, tar, sulphuric ether, and similar remedies, in promoting the removal of tubercle, seems to Dr. Williams extremely doubtful. Naphtha has proved serviceable in his hands in a very limited number of cases, by checking profuse purulent secretion, and the cough, hectic, and wasting, accompanying it; but it has the disadvantage of often unduly checking expectoration, and exciting pain, tightness of the chest, and cough, resulting in inflammation or hæmorrhage. Fixed oils are more useful, and can be used in larger quantities; but most of them are apt to disagree with the digestive organs. Dr. Williams here notices the action of cod-liver oil; but it is unnecessary for us to analyze his observations on this subject, as they have been presented to our readers in a more extended form in the first Number of this JOURNAL. It is probable that the more salutary of the changes in pulmonary tubercle, and the absorption of the more injurious part of the deposits, may be promoted by maintaining as free and excited a circulation near the affected parts, as can be carried on without inducing actual hyperæmia. "The more active circulation thus excited promotes the gradual solution of the deposits, chiefly by the oxidating current of arterial blood that it directs through their neighbourhood; and the inquiry naturally suggests itself,—can we aid this process of solution by means which oxygenate the blood more highly than can be done merely by free respiration of pure air? I have before surmised, that it is probable that such agents as nitric and nitro-muriatic acid and chlorate of potass, may contribute to this object; and I now mention them, because I have found their continued use beneficial in many cases after inflammation, in which circulation and absorption were slack, and cacoplastic effusions were accumulating and threatening mischief. So likewise in scrofulous and tuberculous disease, during the maturation and softening of the deposits, these oxygenating medicines sometimes produce decided improvement in the general and local symptoms. Their utility is limited by their tendency to irritate the alimentary canal when given largely or continued long; but they may commonly be advantageously used at intervals, when courses of cod-liver oil or of iron and other tonics are interrupted." (pp. 405-6.)

MORBID GROWTHS are next treated of, under the heads of Non-malignant and Malignant; but the concise and instructive remarks on these we are compelled, by want of space, to pass over. A short section is next devoted to the exemplification of the principal DISEASES OF MECHANISM.

Chapter V. is devoted to the CLASSIFICATION, SYMPTOMS, and DIAGNOSIS OF DISEASES, and commences with an explanation of the objects of NOSOLOGY. In the section on SEMEIOLOGY, Dr. Williams defines the term *sign* as implying generally anything by which the presence of disease may be made known; and *symptom*, as a phenomenon which becomes obvious in the course of disease, often proving to be a sign, but frequently of too uncertain connexion with a particular disease to be considered as such. He prefers the more specific designation of *physical signs* and *vital symptoms*.

Physical Signs are "those physical properties of the body, or of a part of it, which are perceptible to any of the senses of the observer." The power of determining the difference between the signs of health and those of disease, depends on our knowledge of the former; and this may be derived—"1. From general observation or experience of healthy standards; 2. From anatomical and physiological knowledge of what the state of health ought to be; or, 3. From a particular knowledge of the standard of health in any individual case." (p. 434.) A comparison of parts which are naturally symmetrical is a standard that is frequently available, as in the limbs or chest; but when organs are not symmetrically placed, as the liver, a previous knowledge of their natural structure, position, and physical properties, is necessary. We must also be acquainted with the healthy mechanism and functions of the organs of respiration, circulation, digestion, and excretion. It is important, also, to have a knowledge of physical laws: and on this point we quote Dr.

Williams' observations. "Physical signs are phenomena taking place in the body, in accordance with physical laws. It is therefore obvious, that a knowledge of these laws, as well as of the mechanism of the body, will assist us to interpret these phenomena; to explain of what they are signs, how they are caused, the variations which they may present, and the best mode of appreciating them. Thus, an aneurism of the arch of the aorta may be chiefly detected and studied through the physical signs which it produces. It forms a tumour under or near the top of the sternum, pulsating in a distinct manner, and with a peculiar sound; this tumour may press on the air-tubes in such a way as to alter their shape, and by partially obstructing the passage of the air through them, may also change the sound of breathing in a particular way: by compressing the veins, it may also throw their current into unusual sonorous vibration; or by a more complete obstruction, it may cause the veins to swell in a remarkable degree above the tumour: by its enlargement, the aneurism encroaches on the lungs, the walls of the chest, the muscles, nerves, bones, ligaments, etc., in such a way, as to alter their physical properties and positions, and thus to produce various physical signs. Now, all these physical signs are phenomena produced in the altered mechanism, according to certain laws; and it is plain, that a knowledge of these laws must greatly assist us to understand the signs, and to trace them to their true causes. Nay, even the aneurismal tumour itself, in its production, increase, and intrinsic signs, can be rightly understood only through a knowledge of hydraulics and dynamics, in connexion with the structure of the heart and arteries in health and disease." (p. 436.)

Vital Symptoms are those phenomena which depend on the vital properties of a part or parts of the body. These properties, irritability, tonicity, sensibility, secretion, etc., and the more complex functions arising from their combination, produce, in a natural state, the symptoms of health; but when in excess, defect, or perversion, the symptoms of disease. Vital symptoms are also to be found in the state of the various functions of the body; for instance, valuable information is to be derived from the pulse, the skin, the tongue, and the alvine and urinary excretions. To understand the symptoms, an accurate acquaintance with the structure and functions of the healthy and diseased body is necessary; and the applicability of symptoms to semeiology and diagnosis will become more complete as our knowledge of physiology and pathology is advanced. In the mean time, their value must, in many cases, be determined empirically, by *the statistical* or *numerical* method; but here we should take care "that the number of observations be very large, that they should be applied to similar cases, and that the majorities which establish the rule should very greatly predominate over the exceptions." The importance of attending to the respective value of physical signs and vital symptoms, is clearly pointed out by Dr. Williams, who observes: "It is obvious that both classes of signs ought to be carefully taken into account; and the more fully the physical and vital properties which constitute them are understood, the more available will signs and symptoms be to instruct us as to the nature and treatment of disease." (p. 441.)

Diagnosis has for its object "to determine either the intimate nature and seat of a disease, or its name and place in a classification of phenomena, grouped under the name of special symptoms." (p. 442.) It should be, as far as possible, founded on pathology: but as this is imperfect, the numerical method must often be employed; and, in some instances, the causes and treatment of the disease give aid in the diagnosis. It may be *general or special*; the former comprehending the distinction between the principles or elements of disease; the latter relating to the distinction of diseases according to their chief seat, where they have one, or according to some other specific difference, where they have not. Special diagnosis often also follows and distinguishes diseases in their further differences of seat or character. Dr. Williams gives three problems illustrating the mode of investigating and distinguishing diseases in different cases. 1. "General pathology having

pointed out the general nature of a disease, it is required to determine its precise seat"; as in pneumonia. 2. "Previous history, prominent symptoms, or physical signs, having pointed out the seat of a disease, it is required to determine its nature"; as in the diagnosis of gastrodynia from gastritis. 3. "Symptoms being too few or too inconclusive to lead the diagnosis, both the seat and nature of a disease are to be determined"; this is a common case, and is exemplified in the diagnosis of symptomatic from typhoid fever. Thus is illustrated the importance of being acquainted with every department of medical knowledge. "Natural shrewdness and tact," says Dr. Williams, "with some general knowledge of the nature and treatment of disease, may sometimes enable a comparatively ignorant person to practise medicine with an appearance of success; but such a person can make no hand of diagnosis; and he wisely either evades the whole subject or expresses his opinions in vague terms, and scrupulously avoids their being brought to the test of the scalpel. The well-informed practitioner, on the other hand, feels that this is the subject which requires the full application of his mental powers and knowledge, as well as the keen exercise of his powers of observation; and, in proportion as his senses are practised in observing, his information well arranged in relation to what he observes, and his judgment matured in discriminating and deciding the results, so will he be successful in diagnosis, and in applying it to prognosis and practice." (p. 445.) In investigating the symptoms of a case, it is of importance to attend to the *aspect* of the patient, to become acquainted with his *previous history*, both in health and disease, and with the *cause and mode of commencement and progress of the present attack*. In investigating the present state and symptoms, *all* the functions of the body, whether stated or not by the patient to be diseased, must be made severally the objects of careful examination. The object of this is "not merely to determine the particular disease under which the patient labours, but to discover what is healthy as well as what is morbid in his condition. The prognosis, or estimation of the amount and event of the disease, and the application of treatment, require this full investigation. We have to consider, not merely *disease in the body*, but *the body in disease*, and it is by losing sight of this great practical axiom, that minute or microscopic inquirers, who may be singularly successful in special diagnosis, signally fail in prognosis and in practice." (p. 446.)

Chapter VI is devoted to Prognosis, or Foreknowledge of the Results of Disease. After some instructive observations on empirical and rational prognosis, Dr. Williams enumerates, with examples, the circumstances from which a rational prognosis may be formed. These relate partly to the patient, and partly to the disease; and are,—the age, sex, temperament, previous and present diseases, and previous habits of the patient, with his condition at the time of the attack; the cause of the disease, its situation and nature, extent and progress, and the character of its symptoms.

The chief modes of DEATH are thus enumerated:—

Death (cessation of function) beginning at the heart { Sudden = syncope. / Gradual = asthenia.
beginning at the breathing apparatus = Asphyxia or apnœa.
beginning at the brain = Coma.
beginning at the medulla = Paralysis.
beginning in the blood = Necræmia (*νεκρὸς, dead; αἷμα, blood.*)

Death by CARDIAC SYNCOPE may occur either—1. By the heart losing its irritability, and ceasing to contract; or—2. By its being affected with tonic spasm so as to remain rigidly contracted. In the former case, the heart is distended with blood; in the latter it is contracted and empty, and this state was long mistaken for concentric hypertrophy, till its true nature was pointed out by Cruveilhier and Dr. G. Budd. Both these arise from somewhat similar causes. Death by ASTHENIA is the mode of termination of many diseases which exhaust the strength, without directly interfering with the more vital functions. The symptoms of this mode of death, as well as by APNŒA, COMA,

and PARALYSIS, are ably and lucidly described. The last form mentioned is death by NECRÆMIA, in which the chief and most remarkable change is exhibited by the blood. This occurs especially in typhoid and other malignant and pestilential fevers, in which the presence of blood-disease is indicated by petechiæ and vibices, internal hæmorrhages, the fluidity of the blood, and its frequent unusually dark colour and tendency to pass into decomposition. We quote Dr. Williams' vivid description of this mode of death in its most marked form: "The blood, the natural source of life to the whole body, is itself dead, and spreads death instead of life. Almost simultaneously, the heart loses its power, the pulse becoming very weak, frequent, and unsteady; the vessels lose their tone, especially the capillaries of the most vascular organs, and congestions occur to a great amount; the brain becomes inactive, and stupor ensues; the medulla is torpid, and the powers of respiration and excretion are imperfect; voluntary motion is almost suspended; secretions fail; molecular nutrition ceases; and at a rate much more early than in other modes of death, *molecular* death follows close on *somatic* death—that is, structures die and begin to run into decomposition as soon as the pulse and breath have ceased; nay, a partial change of this kind may even precede the death of the whole body (somatic death—Dr. Prichard); and the fœtid aphthous patches in the throat, the offensive colliquative diarrhœa of persons in the last stage of various fatal diseases; parts running into gangrene, as in the carbuncle of plague, the sphacelous throat of malignant scarlatina, and the sloughy sores of the worst forms of typhus, and in the large intestines in dysentery, or the putrid odour exhaled even before death by the bodies of those who are the victims of similar pestilential diseases,—are so many proofs of the early triumph of dead over vital chemistry." (p. 466.) This is an extreme case; but many lower degrees arise from endemic, epidemic, and infectious influences, certain animal and vegetable poisons, as that of the most venomous reptiles and fungi, and probably some mineral poisons, as sulphuretted hydrogen, selenium, and, in part of its operations, arsenic. These may at once produce death; or the vital powers may react in various degrees. This reaction may be successful in removing the poison; but it may also induce serious organic mischief, and some other form of death. A due state of activity of the excreting organs is often beneficial in carrying off the offending matter, when it is small in amount; and it is those persons in whom the functional activity of these organs is impaired, that are the worst subjects for blood-diseases. Necræmia may also originate within the body, from causes which, in a more limited degree, would induce cachæmia. The general symptoms of death by necræmia are commonly of the class called typhoid, putrid, or malignant. They are thus enumerated: "a congested appearance of the whole surface, the colour being dusky or livid, and extending to the conjunctivæ, tongue, and fauces; various slight exanthematous or papular patches on the skin, often with petechiæ; more extensive hæmorrhages in form of ecchymoses, or oozing of thin bloody fluid from the gums, nostrils, and sometimes from other passages; extreme prostration of strength, with an obtuse state of all the senses and mental faculties, sometimes combined with delirium and twitchings of the limbs; half-closed eyes and dilated pupils; a very frequent, weak, and soft pulse; frequent and unequal respiration; no appetite; intense thirst; a dry, brown tongue, with dark sordes on the lips and teeth; a progressive fall of temperature, which may have been elevated at first; often cold, clammy, and fœtid perspiration; hiccup; subsultus tendinum; scanty, offensive urine; involuntary discharges." (p. 468.)

We had intended to complete this notice of Dr. Williams' *Principles of Medicine* in the present number; but we find that the attempt would prevent us from doing justice to the valuable chapter on HYGIENICS, which next follows. We therefore defer the conclusion of our analysis.

(To be continued.)

Dictionary of Practical Medicine: comprising General Pathology, the Nature and Treatment of Diseases, Morbid Structures, and the Disorders especially incidental to Climates, to the Sea, and to the Different Epochs of Life; with numerous Prescriptions for the Medicines recommended; a Classification of Diseases according to Pathological Principles; a copious Bibliography, with references; and an Appendix of approved Formulæ; the whole forming a Library of Pathology and Practical Medicine, and a Digest of Medical Literature. By James Copland, M.D., F.R.S. Parts xiii and xiv. London: 1849.

In the Parts we have now before us, we find articles extending, in alphabetical order, from Poisons to Schirrhous Tumours: and when we say that they are of such a character as to justify the description of the work which we have just quoted from the title-page, we have awarded praise of no ordinary kind. Dr. Copland is indeed one of the most remarkable of living authors; he not only brings to bear upon his subjects a vast—we had almost said an excessive—amount of erudition, but he illuminates and brings home all this learning to the mind of the reader, by the soundness with which he applies his personal experience. For one author, single-handed, to have undertaken this comprehensive Dictionary of Practical Medicine, is not remarkable; for perhaps there are many who think they could do it as well as, or even better than, Dr. Copland; but no one who understands the magnitude of the labour, can collate this work with others of a similar kind, without being astonished at its general excellence, and its pervading superiority.

It would be misplaced, even were it possible, to introduce in this place anything like a critical analysis of the different articles; for they themselves may truly be regarded as analytical digests of the best researches on each subject.

We are somewhat surprised to observe, that "Scarlatina Rheumatica, or Eruptive Articular Fever" is described as a distinct disease, the product of a different morbid poison from Scarlet Fever. We have always regarded rheumatic scarlet fever as a mere variety of the disease; and we think, that during the late epidemic, this fact must have become pretty evident to all who were in the habit of seeing Scarlatina from day to day, in its progress through families and districts. In the same family, under the same roof—and, we are constrained to believe, arising from the same contagion—we have seen cases attended with the most intense articular rheumatism, occurring along with others, in which there were either no rheumatic symptoms at all, or in which they were trifling, when compared with those depending on the state of the throat, etc. There is one circumstance, however, in our experience which, in the opinion of some, may disconnect the two affections; and that is, the modification which the rheumatic tendency seems to exert upon the eruption. It generally consists of red blotches, mingled with large patches of urticaria, and is most abundant over, and in the vicinity of the joints. This was the character of the eruption in all our severe rheumatic cases; but we are not aware that this distinction has been pointed out by authors as existing between rheumatic and non-rheumatic cases of scarlet fever, although the relation which exists between urticaria and rheumatism is generally recognized.

First Principles of Medicine. By Archibald Billing, M.D., A.M., F.R.S. Fifth Edition, revised and improved. London: 1849.

The high reputation which Dr. Billing's work on the Principles of Medicine has long sustained, and the lengthened notice we are in the course of giving of Dr. C. J. B. Williams' book on the same subject, renders it unnecessary to furnish an analysis of the former. While, however, we acknowledge its merit, as setting forth the views which the author has been led to entertain from a lengthened clinical experience, we think that the work might be ren-

dered still more on a level with the present state of physiological and pathological knowledge, and more adapted to the wants of the junior members of the profession. A division into chapters would be desirable; and some preliminary remarks on the ultimate pathological elements would greatly facilitate the understanding of subsequent portions of the book. From some of the physiological views of Dr. Billing, we must express our dissent. Thus, at p. 21, he states that the carbon which is set free from the tissues, undergoes combustion in the lungs. We thought that this matter had been long ago set at rest. Some of his ideas, also, on the means by which the right auricle is filled, are such as we can be scarcely led to adopt. Though the author is, certainly, at times at variance with established physiological opinions, nevertheless much valuable information, especially on the subject of therapeutics, may be obtained from a perusal of his work; and we would recommend it as one of the books which a medical practitioner may advantageously consult, with the object of enlarging and consolidating his principles of treatment.

Clinical Midwifery; comprising the Histories of Five Hundred and Forty-Five Cases of Difficult, Preternatural, and Complicated Labour; with Commentaries. By Robert Lee, M.D., F.R.S. Second Edition, pp. 228. London: 1848.

This edition contains forty-five additional cases of Difficult, Preternatural, and Complicated Labours, which have come under the observation of the author, during the five years which have elapsed since the first appearance of the work. The book is divided into eight Reports:—1. Observations on the present state of Operative Midwifery; and the history of eighty cases in which the Forceps was employed. 2. Difficult Labours from Distortion of the Pelvis, Swelling of the Soft Parts, Convulsions, Hydrocephalus in the Fœtus, and other cases in which Delivery was effected by Craniotomy. 3. Induction of Premature Labour, in cases of Distortion of the Pelvis, etc. etc. 4. Histories of 101 cases of Preternatural Labours. 5. Histories of 63 cases of Placental Presentation. 6. Histories of 44 cases of Uterine Hæmorrhage in the latter months of Pregnancy, during Labour, and after Parturition. 7. History of 35 cases of Retention of the Placenta. 8. History of 48 cases of Puerperal Convulsions.

It rarely falls to the lot of one man to have witnessed so many cases of Difficult, Preternatural, and Complicated Labours, as Dr. Lee has seen; and, when we recollect that, numerically considered, such cases form a very insignificant portion of labours, we have evidence that Dr. Lee occupies, in the estimation of his brethren, the foremost rank among consultants in obstetric emergencies. From such an author, we would have liked a terse and succinct running commentary upon the cases; and we hope, that in a future edition, Dr. Lee will incorporate with the detail of cases, some rules of practice. In its present form, the work is only adapted to the somewhat experienced physician; but it might easily be rendered an invaluable clinical guide to the student and junior practitioner.

The Results of all the Operations for the Extirpation of Diseased Ovaria, by the Large Incision, from September 12, 1842, to the present time; to which is appended an Essay on the Diagnosis, Prognosis, and Treatment of Ovarian Diseases. By Charles Clay, M.D. Manchester: 1848.

In the work before us, Dr. Clay gives an account of the whole of the abdominal sections in which he has been concerned up to the date of publication, being forty in number. He thus expresses the results in a tabular form:

	Died.	Recovered.
1 Large fleshy tuberculous tumour of the uterus	1	0
1 Large uterine disease, combined with disease of both ovaries	1	0
1 Large disease of one ovary, with uterine disease	1	0
32 Ovarian tumours	10	22
5 Exploratory Incisions	1	4
	14	26

It appears, therefore, that out of forty cases in which the section was performed, fourteen, or more than one-third, died; which, we consider, is an amount of mortality sufficient to prevent any operation from being considered legitimate, unless when performed for the purpose of rescuing from inevitable death. Now, it is well known, that by means of abdominal support, ovarian dropsy may, in a large number of cases, be rendered only an inconvenience, and not a source of danger; and we think that Dr. Isaac B. Brown and others have shown, that by the proper application of pressure, many cures may be actually effected.

Our principal objections to Ovariotomy are, 1. The extreme difficulty of forming an accurate diagnosis; 2. The occasional occurrence of spontaneous cure;[1] 3. The success which has attended the treatment by pressure; 4. The disease not being necessarily fatal in itself; 5, and lastly, the great mortality which has attended the operation, in the hands of men of undoubted skill. We will not go so far as to say, that the operation is one which ought never to be performed; but we do say, that it ought rarely to be had recourse to, and that there are very few of Dr. Clay's cases in which it ought to have been attempted. In thus strongly denouncing Ovariotomy, as a general means of treating ovarian tumours, we must, at the same time, state our hearty approbation of the candid manner in which Dr. Clay has laid the results of his experience before his professional brethren. Though we greatly differ from him on the subject of Ovariotomy, we do not the less esteem him as a worthy labourer in that department of science, which he especially cultivates; and to the literature of which his little book must be received as a valuable contribution.

We observe the following manuscript addendum, in the copy which has been sent to us for review:—"Case xli. Mrs. Gregory, *successful*, now quite well; operated on June 12th, 1849."

Portraits of the Diseases of the Scalp, with the Safest and most Efficient Modes of Treatment. By Walter Cooper Dendy, Senior-Surgeon to the Royal Infirmary for Children. 4to. London: 1849.

These portraits are not striking likenesses of the diseases the names of which they bear. The treatment inculcated is generally sound: but taking the work all in all, it hardly surpasses mediocrity. We regret being obliged to say so; but we must speak of books as we find them. Mr. Dendy being undoubtedly a man of talent, and a good practitioner, it is remarkable that he should have authorized the present publication.

Proceedings of the Westminster Medical Society, Nos. I, II, and III. London: 1849.

The Westminster Society received a large accession of new members during last session; from which cause, and the value of the papers read before it, an authorized version of its proceedings is now issued. The three numbers which have appeared contain much valuable matter. We propose, in future, regularly to report the meetings of this Society; and in our next number will give an account of what was done during last session.

[1] Vide Dr. Hughes Bennett's case, p. 285 of this Journal for March.

PARTURITION, AND THE PRINCIPLES OF OBSTETRICS. By W. TYLER SMITH, M.D. London: 1849.

(*Continued from p. 656.*)

In Lecture Eighteenth we find an interesting exposition of EXTRA-UTERINE REFLEX ACTIONS OF AN ABNORMAL CHARACTER, occurring before, during, and after Parturition. Dr. T. SMITH truly remarks that "within proper limits, all the extra-uterine actions excited by parturition are as beneficial as the actions of the uterus itself." The DIARRHŒA AND DIURESIS which frequently occur during the first few days after delivery, are correctly stated to be *salutary*. "In patients," says the author, "who have suffered from albuminuria during pregnancy, or whose extremities are affected with œdema, the increased action of the kidneys is most beneficial." (p. 262.) There can be no doubt, we think, that this is often Nature's method of averting toxæmic puerperal convulsions, abundant alvine and renal excretions being in some special cases required, in supplement to the lochial discharge.

IRRITATIVE COUGH, often so troublesome after delivery is thus described: "This cough is accompanied by constant irritation of the throat and larynx. It is generally more relieved by food and the pressure of the abdominal bandage, than by sedatives or the ordinary means of allaying cough. I have seen it produce more inconvenience than even severe after-pains. It particularly interferes with the sleep and repose so necessary to recruit the strength of patients recently delivered. Each time that the patient sinks into insensibility, she is roused by a painful sense of strangulation, and a prolonged fit of coughing. The cough is purely irritative, being quite unconnected with inflammatory action or increased secretion in the larynx or bronchi. This form of cough, if allowed to continue, becomes most troublesome a day or two after delivery, at the time when the secretion of milk from the breasts is fully established. Some women suffer from this affection in a more moderate form during the whole of lactation, particularly after suckling the child, and before taking food." (pp. 262-3.)

THE RELATION OF THE UTERUS TO THE MAMMÆ, with reference to the influence which the former has on the secretion of milk, was spoken of by Dr. Smith, when describing the genesial cycles of ovulation, gestation, and lactation: it is again alluded to in the present chapter, with reference to the sensation of the "draught" in the breasts, which may be considered as "a part of the after-pain." In a practical point of view, this is an important fact; and one which we believe is now generally acted on. We mean, that when there is uterine inertia after delivery, with retained placenta, or too profuse hæmorrhagic discharge, the application of the infant to the mammæ often proves an immediate excitor of uterine contractions, and, consequently, a source of safety to the mother. We have seen the benefit of this practice in not a few cases.

MOTOR ACTION BELONGS TO THE ORIFICES OF THE MILK DUCTS. Even in the virgin, a decided amount of erection may take place in the nipple: and this "could not take place unless there was some motor provision for retarding the return of the blood." Dr. Smith is inclined to believe that rudimentary constrictor muscles exist in the human female—*lactatory sphincters*, similar to what Professor Owen has discovered in the platypus: and from the various well-known facts which Dr. Smith recites in proof of this view, there can be no reasonable doubt of its correctness. We must not omit to notice a very important practical point which serves to corroborate this opinion. Cold water is the best application to sore nipples, and when combined with rest to them, is generally sufficient to effect a cure. This fact we learned long ago from an eminent accoucheur; and we have since found the treatment of great benefit in enabling women to nurse, who were reluctant to attempt it, on account of the agony excited by the infant. We think that Dr. Smith's remarks fully and satisfactorily explain why the simple treatment alluded to

should be pre-eminent over all others. He says: "In some cases of sore nipple, it has appeared to me, that the irritation which should dilate these orifices, being present to a morbid extent, excites them to painful contraction instead of physiological dilatation. Cooling applications, rest to the nipple, by partially feeding the child for a short time, or the use of an artificial nipple, are the proper remedies, instead of ointments, and astringent applications." (p. 266.)

In Lecture Nineteenth, the following subjects are discussed:—Natural and Morbid Conditions of the Reflex Function in the Infant at the time of Birth: The influence of Muscular Tone: The Colostrum: The Meconium: Icterus Neonatorum: Suction and Deglutition: Infantile Mamma: Morbus Cæruleus: Tetanus Nascentium: and Congenital Contractions of the Extremities.

Suction is an act entirely independent of the cerebrum. The author "has seen the movements of sucking, performed by an acephalous fœtus, as perfectly as by a well formed child." (p. 271.) With the development of the teeth, mastication becomes substituted for suction, which becomes lost (or nearly so) as a reflex function. The observations which Dr. Smith makes on suction and deglutition are eminently suggestive; and he well remarks: "An analysis of the earliest and purely reflex and physical movements of the fœtus and infant, will form a most interesting chapter at the very threshold of psychology, and one which is as yet entirely unwritten."

Morbus Cæruleus, Dr. T. Smith says, "can hardly be considered as a motor derangement. It arises from the mechanical continuance of the open state of the foramen ovale, and the consequent admixture of the blood of the two sides of the heart. The cause of the convulsions occurring in this condition is obscure. They may be referred either to irritation of the heart itself, or to the circulation of venous or mixed blood in the arteries. But it is less important to discuss this malformation and its consequences, as they are almost beyond the reach of remedies." We can neither fully participate with Dr. Smith as to the obscurity of the cause of convulsions, nor in the opinion that morbus cæruleus is almost beyond the reach of remedies. It is irremediable, when there is such malformation of the heart as constitutes a structural impediment to the closure of the foramen ovale;[1] but when there is not this anatomical difficulty, and when the patency of this fœtal conduit persists, as it often does, from physiological and not from anatomical causes, the morbus cæruleus, with its concomitant convulsions, may be cured, and threatening death averted. Some time ago we were consulted in the case of a puny infant about eighteen hours old, who had a blue colour, and on being put to the breast, was always seized with convulsions. The temperature could with difficulty be kept up. We were informed that the infant had only cried feebly. The medical attendant had given, without any reservation, his opinion that the child had malformation of the heart, and must die in one of the fits. Imagining that the symptoms arose from imperfect expansion of the lungs, and that one forcible inspiration might suffice to inflate them, and also to abolish the remains of the peculiarities of the fœtal circulation, we had the infant wrapped up in hot moist flannels, and having for an instant bared the chest, we dashed ice-cold water over it and the face. The effect was all that could be wished: the infant cried with energy; and upon examining the face and surface generally, a few minutes afterwards, we had the delight to see that the blue colour had nearly disappeared. A slight convulsion returned on its being applied to the breast, and during ten or twelve hours, the skin was bluer than natural. Twice or thrice the operation with the warm and cold water was repeated, and in two days the infant was entirely free from all symptoms of the blue disease, and still lives a healthy, but not robust child. This case indicates the hopefulness of proper and speedy treatment: and also explains the nature of the convulsions, at least in one instance—and that probably, a fair example of this class of cases. In that case the convulsions were entirely

[1] This irremediable condition is often the result of fœtal endocarditis.

those of asphyxia: and in two other cases which we had frequent opportunities of observing during life, and of dissecting after death, the symptoms and post-mortem condition of organs very clearly pointed to asphyxia as the cause of the convulsions. Along with the open foramen ovale, there was pulmonary congestion: and a considerable portion of both lungs had never been penetrated by air. It may be said, that the admixture of the venous with the arterial currents in the heart may cause the convulsions, by a toxæmic influence on the spinal centre; and we cannot deny that some part of the phenomena may depend on this cause. The treatment still remains the same—to excite inspiratory movements sufficient fully to inflate the lungs; which is not only beneficial as regards the lungs, but is also the best means of causing complete abolition of the remaining fœtal peculiarity of an open foramen ovale.

Congenital Club-Foot and Deformities of the Hand, Dr. Smith correctly regards as exaggerations or perpetuations of the tonic contraction which is natural in utero. Every one who has been in the habit of examining newly-born infants, must have been struck with the frequent contracted condition of their hands and feet: and it is easy to see, how the natural tone of the fœtal muscles may be converted, by its persistence in extra-uterine life, into such a pathological condition as talipes. "Many," says Dr. T. Smith, "of the deformities of youth, and some of the operations of orthopædic surgery would, I strongly suspect, be saved, by attending to the conditions of the limbs of infants soon after birth, and at the time of the first attempts at walking." The importance, in this respect, of the latter epoch is proved by what takes place when the infant places his feet on the ground:—they "fly off from the surface," in consequence of the excitement of reflex action.

In Lectures Twentieth, Twenty-First, Twenty-Second, and Twenty-Third, we have one of the ablest discussions on the subject of Puerperal Convulsions with which we are acquainted. We say this, though not entire converts to every physiological doctrine and corollary propounded. In the main, we have no doubt Dr. Smith is correct; and so far as treatment is concerned, his remarks carry us entirely with him: they point to the use of remedies through principles; they are well calculated to give a precision to the views of the educated practitioner, and to enable him to treat each case on its own merits, and not after the ignorant routine of empiricism, or in blind obedience to the often inapplicable dogmatism of esteemed authors. The young practitioner who does not daily study disease at the bed-side, is too apt to think that for *a* disease there is *a* treatment—a fatal mistake, which causes not a few talented physicians to drift upon the shoals of empiricism, whence they are very easily swept into the melancholy vortex of medical scepticism. Such men are useless at the bed-side—to which, fortunately, they are seldom summoned. The physicians who fail through scepticism are numerous; and they are commonly those who, judging from a few accidental cases of prosperity, fondly dream that a crowd of patients are sure to come to them at the end of ten or twelve years, provided that period be passed in orthodox "purity," and ostentatious expenditure in some fashionable street or square, varying, perhaps, the monotony of professional idleness, by an occasional run of the amateur practice of a dispensary. A correct knowledge of disease cannot be so obtained: and the management required in the sick rooms of the comfortable classes, can never be adequately learned in desultory pauper practice. We were led to make these remarks from the satisfaction we felt at observing that Dr. T. Smith is no disciple of *the faithless sect* of the school of Young Physic; that he has an enlightened trust in remedies judiciously applied, in accordance with the lights of physiology, and the results of clinical study. We extract his remarks on the

Treatment of Puerperal Convulsions. "*Bloodletting.* The action of bloodletting on the spinal marrow is greatly modified by the condition of the circulation. In fulness of the vascular system, it is the most powerful sedative of spinal action we possess. Hence, venesection is the grand remedy in the simpler form of puerperal convulsions, where the disease chiefly depends on stimulation of the spinal marrow by excess of blood, or on the

mechanical pressure exerted by the blood on that organ, together with the counter-pressure of the distended brain on the medulla oblongata. In such cases, bleeding should be performed with a view to its sedative action on the spinal marrow, and to avert the mechanical effects of vascular pressure from this organ. Alone, it will frequently be sufficient to subdue the disease, particularly when the fits come on before the beginning of labour, or after delivery. But another most important intention of bloodletting should never be lost sight of—namely, that of preserving the brain from injury during the convulsion. Besides the *primary* cerebral congestion, which may have been the cause of the attack by its counter-pressure on the medulla, the convulsive action itself, with the glottis closed, and the various sphincteric actions in operation which were considered in the former lecture, exerting great muscular pressure on the whole vascular system, and causing, as they must, the greatest turgidity of the vessels of the head, are dangerous sources of fatal cerebral congestion, or of serous or sanguineous effusion. As in the case of epileptics, women in puerperal convulsions frequently die of apoplexy, produced by the immense pressure exerted on the cerebral column of blood during the fits. It is in great measure from the effects of bloodletting, in warding off accident from the brain, that bleeding is so universal in this disease. The due recognition of the distinct operation of bloodletting on the cerebral and spinal systems is of the utmost consequence. In plethoric states of the circulation, it is in this disease *curative* in its action on the spinal marrow, *preventive* in its action on the brain. In the absence of definite ideas regarding the effects of bloodletting in this malady, it has been often pushed to excess, or practised where it should have been altogether avoided. In the numerous cases where, besides vascular excitement of the spinal marrow, severe irritation of spinal excitor nerves exists as a conjoined cause of convulsion, repeated bleedings will often fail to subdue the disease, unless the *eccentric* irritation be at the same time removed. When irritation of the uterus, the rectum, or the stomach, is in part excitor of the convulsion, bleeding *alone* cannot be relied on. It may at first diminish the impressibility of the *central* organ, rendering it less susceptible of the incident irritation, but if persisted in to a large extent without the removal of the *eccentric* irritation, it becomes in the end positively injurious, by increasing instead of diminishing the excitability of the spinal marrow. In vascular plethora, depletion is undoubtedly a sedative to the spinal system, but when the circulation is reduced considerably below par, loss of blood becomes an actual stimulant to this organ. Hence it is, that the reports of those who have most pertinaciously followed bloodletting, exhibit the loss of a greater number of patients than those who have been more cautious in this respect. The propriety and extent of venesection must be estimated, then, not by the violence of the disease, but by the state of the circulation in the interval of the fits, and with especial reference to the different effects of vascular plethora and vacuity upon the spinal centre. I should avoid these manifest repetitions had I not thoroughly convinced myself, that patients rightly bled in the first instance are frequently subjected to successive depletion, until loss of blood itself becomes the cause of the final seizures. Nothing is, I believe, more certain to remove this deplorable source of mischief than the distinct perception of the effects of venesection on the spinal marrow, the true organ of puerperal convulsion. Similar remarks would apply with almost equal force to the other parts of the common antiphlogistic regimen. Nearly allied to the *modus operandi* of bleeding are the effects of nauseating doses of emetic-tartar, which have been found so serviceable in the treatment of puerperal convulsions by Dr. Collins. It is more than probable, that this remedy acts as a sedative on the spinal system through the medium of its effects on the circulation. In the convulsion occurring in delicate anæmic women, bleeding is generally inadmissible, becoming, in fact, under such circumstances, an exciting cause of the disease. Still, in

cases approaching to this state, cautious bleeding may be sometimes necessary to *preserve* the brain from injury, but here venesection requires to be followed promptly by stimulants: such cases are, however, rare in comparison with those in which fulness of the circulation exists at the onset of the disease.

"*Dilatation of the Glottis.* During the attack of the convulsions the glottis is partially or entirely closed. The greatest authority on this point, Dr. Marshall Hall, questions if true convulsion could ever occur without this state of the glottis, and the cerebral and spinal congestion which it occasions. We know that the epileptic attack is sometimes warded off by the dash of cold water on the face or chest, so as to excite a sudden inspiration and the dilatation of the glottis. It is on the same principle, that of exciting a strong inspiratory act, that we stimulate the nostrils or sprinkle the face with cold water in syncope. Excitation of the incident nerves of inspiration has in the same way been known to prevent the puerperal convulsion. Harvey gives an instance in which stimulation of the trifacial nerves within the nostrils recovered a woman who became comatose during labour. Denman also relates an interesting case, in which a convulsion was excited during every labour pain, but in which he kept off the attacks, until delivery was completed, simply by throwing cold water on the face with a bunch of feathers at each accession of pain. It was found that this mode of proceeding, from which he augured so favourably from its effects in this and other cases, did not prove equally efficacious on all occasions. He observes, that this is 'a safe remedy,' which cannot be said of all measures resorted to in this disease. It must certainly be productive of benefit in cases where the glottis is not so firmly locked as to render its dilatation by this means impossible. Even if it does nothing to prevent the accession of the fit, every time we can dilate the glottis, and cause a full inspiration, we take off a considerable amount of vascular pressure from the nervous centres, and lessen the proportion of venous blood in the system.

"*The Application of Cold.* Cold, applied to the head in the form of napkins, lightly wrung out of cold or iced water, ice itself, or a full stream of cold water poured from a height, has become an approved remedy in puerperal convulsions. It therefore becomes an interesting question—How does cold thus used act on the nervous system? It may act as a sedative on the cerebral portion of the spinal marrow, or it may lessen the distended state of the cerebral circulation, and thus relieve the counter-pressure of the brain on the intra-cranial portions of the spinal system. Probably, it acts in both of these modes. When used in the form of the continuous douche, as sometimes recommended, it would, in addition, tend to excite acts of inspiration, and thus dilate the glottis. The primary sedative action of cold on the spinal centre would seem to be shown satisfactorily by the reputed good effects of cold applied to the whole length of the spinal column in tetanus. The application of cold to the spine, as well as to the head, may hereafter be found beneficial in puerperal convulsions. Whenever cold in any form is resorted to, its use, except for the purpose of exciting the respiration, must be continuous, as the intermittent application of cold, locally or generally, would excite instead of allay the spinal system. The benefit derivable from cold, appears to arise from its local action on the nervous centres, because in tetanus, the purest form of increased morbid spinal action, cold applied to the spine is serviceable, whereas, when applied to the whole surface of the body, it is extremely dangerous, and even fatal.

"*Administration of Opium.* It is an object of very great therapeutic importance to ascertain the true effects of opium on the spinal system. One author maintains that opium diminishes the contractions of the uterus in after-pains; another, that it increases their energy. Some recommend it in uterine hæmorrhage, as an efficient means of exciting uterine contractions; while some blame its administration, on the plea that it produces uterine

inertia and hæmorrhage. Some, again, maintain that it retards, and others that it accelerates, the progress of labour. With respect to the propriety of its use in convulsions, there is a great discrepancy of opinion. Though we may not yet have sufficient data to form a perfect and decisive judgment, I believe we can at the present time make a very considerable advance in the right direction. When the amphibia are in a state of narcotization from opium, the whole excito-motor system is exalted to an intense degree. The slightest irritation of the surface of the body produces universal convulsions. If this fact were applicable to man, it would be an argument to show that it is a powerful spinal stimulant, as it certainly is in the amphibia. In the state of narcotization by opium in man, there is no positive evidence that the incident spinal nerves are more excitor than at other times; still, in poisoning by opium, convulsions occur, particularly in children, as one of its common toxicological effects. In poisoning by belladonna, convulsive action is much more rare; and it has been found by Dr. Hutchinson, of Nottingham, a successful cultivator of spinal pathology and therapeutics, that belladonna exerts a sedative influence on the spinal marrow in tetanus. That opium does not, in man, allay excitement of the spinal marrow, is shown by its failure in the treatment of tetanus and hydrophobia, the purest and most intense forms of morbid spinal action. The patient may be poisoned by opium without any reduction of the spasm. Mr. Bonney, in a paper on the effect of opiates, has ingeniously suggested, that they prove indirectly stimulant to the reflex actions, because the arrest of the cerebral functions they occasion, increases the muscular irritability. I think there are reasons for supposing that, besides this effect, which is very probable, opium is a direct excitant of the spinal system. It aggravates convulsions, when there is already a state of insensibility from other causes, and when, therefore, this explanation could not be received. It is the general opinion of practical men, that opiates are injurious in the convulsions of children, in epilepsy, and in puerperal convulsions; and it is certainly of little or no value, probably, indeed, it is prejudicial, in tetanus, hydrophobia, and other severe diseases of increased action in the excito-motor system. Some striking distinctions must be made respecting the administration of opium under different circumstances, particularly in puerperal convulsions. If a dose of opium be given in this disease in a full state of circulation, before bleeding, there is an aggravation of the disorder; while if it be given in puerperal convulsions in an anæmic subject, or after excessive depletion, it is of great service. If in a case of convulsions opium be given at the commencement, it is dangerous in its effects; but the same medicine is frequently valuable in the advanced stage of the same case, when the vascular system has been powerfully depleted. Thus it would appear evident, that in convulsions with a full state of the circulation, opium is a *stimulant* to the spinal marrow, while in convulsions with anæmia, it is distinctly *sedative*. It is certainly an important point in practice, that the effects of opium in puerperal convulsion depend on the state of the circulation; that in plethoric or inflammatory conditions it is always dangerous, while in anæmia and debility it may always be used beneficially.

"*Emotion.* The regulation of emotion is of considerable importance in preventing the accession of convulsions when they are threatened, and in averting the return of the attacks, in the intervals where *consciousness* is retained. Mental excitement of every kind should be soothed, and avoided as much as possible. The sight of the infant, of alarmed friends or relatives, unpleasant intelligence, noises in the sick chamber, or still more trifling matters, have caused or renewed convulsions. Perfect quiet and repose within the sick room, and the absence of all signs of excitement on the part of the attendants, are of the utmost consequence; the calm or timid look of the professional man may either excite or prevent a fit. The *psychical* effects of emotion upon the spinal marrow—an otherwise purely *physical* organ, in health and disease

—is one of the most striking and indubitable facts furnished by the pathology and physiology of the spinal system.

"*Relief of the Sphagiasmus and other Spasmodic Contractions of the Neck.* During ordinary labours, care should be taken to avoid increasing the tendency to cervical contractions; this is still more important in labours with symptoms of spinal erethismus, or threatening convulsion. Care should be taken that during the propulsive and expulsive stages of labour, the reflex contractions about the neck should not be increased by excessive voluntary efforts, or by violent emotional disturbance. When the neck becomes tumid at each returning pain, the reflex cervical contractions should be moderated, by directing the patient, not only to withhold voluntary action of this kind, but to cry out during the pains, so as to keep the larynx open. In this way sphagiasmus and laryngismus may both be prevented by volition, in some cases. If the cervical symptoms are severe, venesection should be practised before the accession of convulsion, as a preventive measure. Whenever fulness of the neck occurs, either before or after labour, so as to create an apprehension of convulsion, blood should be taken from the head by leeches, or by cupping. There is no point of greater importance in the prophylaxis of puerperal convulsion than an attention to the state of the cervical region: it is to convulsion what the pulse is to inflammation.

"*Removal of Reflex Causes of Convulsion.* In threatened convulsion, or after the invasion of the disease, it is of the utmost importance to seek out and remove all sources of reflex irritation. Remote causes of irritation should be sought for, and removed with the greatest care. The state of the stomach, the intestines, the breasts, the bladder, and other organs in reflex relation with the uterus should be examined. The recollection of the cases in which I detailed the different reflex varieties of convulsion, will at once suggest the appropriate remedies for the relief of these organs. If the fit has occurred after a full meal, or after indigestible food, an *emetic* of the sulphate of zinc should be administered. If there should be vascular fulness, venesection ought to be performed. The bleeding should precede the emetic, to diminish the danger to the cerebrum from the action of vomiting, for emetics given incautiously have occasionally produced sudden death in puerperal convulsion. However, when the gastric irritation is undoubted, no patient should be suffered to continue in the fits with the stomach unrelieved. It may seem superfluous to urge this, but I have known cases of convulsion from gastric irritation, in which the most sedulous attention has been shown to almost every other organ in the body, except the right one. Still more important than the stomach is the state of the bowels. In convulsions the intestines are very commonly loaded; it immediately becomes a question, how to relieve them without producing greater irritation by the operation than already exists from their loaded condition. The most violent drastics have been given in such cases without any ceremony, as though the more rudely the materies morbi were grasped, the more effective the remedy. But it is of great importance to avoid irritating the intestinal canal unnecessarily. I have known puerperal convulsions produced by giving a brisk cathartic too soon after delivery. In fact, there is little difference between irritant drugs and irritant fæcal matter. Therefore, whenever the bowels can be opened without purgatives administered by the mouth, but by aperient *enemata*, the latter are greatly to be preferred. When we give a cathartic, we never know how long it may remain to fret the bowels, but an enema is sure to return almost immediately. Washing out the bowel is less irritating than drastic cathartics, and equally effective in removing fæcal accumulations. A copious enema of warm water, repeated until the free evacuation has been produced, has often relieved convulsion. If the warm water injection should be insufficient, castor oil, or turpentine, may be added. Sometimes the constipation is so obstinate as to refuse to yield either to enemata or cathartics, and the contents of the bowels positively require to be dug out.

I have seen a case of this kind, in which the fæces were as hard as the *album græcum* of the dog, and in which their excavation was followed by almost instant relief of violent convulsions. The state of the bladder should always be attended to in puerperal convulsion, particularly as, during the insensibility of the intervals, the patient is unable to inform the attendant of its distended condition. This may be a slight thing to mention, but the catheter has sometimes relieved convulsion when the lancet has failed. But the great seat of reflex irritation in puerperal convulsion is in the parturient canal. There is only one direct mode in which uterine irritation can be allayed during puerperal convulsion, except by the removal of the fœtus. This is by *evacuation of the liquor amnii*. In cases of puerperal convulsion, puncturing the membranes takes off a considerable amount of distension from the uterus; diminishing the size of the organ, and the quantity of blood circulating through it. Hence, though it renders the uterus more active, by bringing its parietes into contact with the fœtus, it renders the organ itself less irritating to the general spinal system. The evacuation of the liquor amnii is to the uterus what the partial action of an emetic or an enema is to the stomach and intestines. In convulsion from uterine irritation, much may be done by the avoidance of all unnecessary dilatation and interference with the vagina and os uteri. During convulsions, all operations upon the parturient canal, whether they consist of examinations, dilatation of the os uteri and the vagina, the artificial removal of the fœtus, or the extraction of the placenta, should be performed with the greatest care, and with the conviction of the ease with which renewed fits may be excited by any irritation of the uterine passages." (pp. 330-38.)

This long extract naturally suggests various points of commentary; but these we must allow the reader to supply for himself, our exhausted limits forbidding enlargement. From the same cause, we have not been able to refer to some of the important topics suggested, and partly discussed by Dr. Cormack, at p. 522 of this volume: and the remaining lectures we have hardly room to glance at.

Lectures Twenty-Fourth, Twenty-Fifth, and Twenty-Sixth, treat of Uterine Inertia, and Uterine Hæmorrhage.

Uterine Hæmorrhage forms the subject of the two last Lectures. Physiology is beautifully and instructively applied to the treatment of such cases: and there is certainly no class of obstetric emergencies in which it can be applied more beneficially. Dr. Smith furnishes us with no empirical list of remedies in post-partum hæmorrhage; but gives a clear analytical and synthetical idea of all the means which may be useful. As a last quotation, we give his summing up of the true therapeutics of uterine flooding,—the most perilous emergency in which a lying-in woman can be placed.

"The vessels of the uterus should either be compressed mechanically, between the hands, or the venous and arterial flow of blood from the heart should be prevented by pressure on the aorta and inferior cava. Stimulants (brandy, as the strongest, is the best) should be given by the mouth; the head of the patient should be kept low, as the continued action of the heart will depend greatly on the state of the cerebral circulation. The inferior extremities should be raised, and it has been recommended to place ligatures, or tourniquets, upon the extremities, in order to reinforce the circulation as much as possible. As quickly as may be, the ergot of rye should be given with the stimulants, to ensure the direct action of the spinal marrow upon the uterus. This form of action may be excited even after the uterus refuses to obey stimuli of reflex action. The reflex actions should be excited by *alternate* cold douching and warm applications to the abdominal surface and vulva, and by the application of the child to the breast, or by causing the nurse to suck the breasts. The drinks should be given cold or iced, to stimulate the pneumogastric nerve. The muscular irritability of the uterus should be stimulated either by irritation through the abdominal parietes, the appli-

cation of galvanism, or the introduction of the hand into the uterus. Where the latter is resorted to, the uterus should never be injured by improper pressure. Irritation, not force, is required! As a last resource, transfusion has been recommended in these cases; but it is at such moments, above all all others, that we require instant remedies, and transfusion is, alas! an operation requiring more time than life will often wait for. We may suspect that in the fortunate recoveries by transfusion which are on record, the patient would have recovered by other means. Here we have exhausted and combined all our most potent remedies; but they will rarely fail, when properly directed, unless, indeed, the patient is already cadaveric when they are commenced. As there is no malady in which the sudden danger to life is greater than in uterine hæmorrhage, so, most fortunately, there is no contingency in which the resources of Art are more powerful or numerous." (pp. 381-2.)

Let us now repeat, what we said in commencing this analysis—that the appearance of Dr. Smith's *Principles and Practice of Obstetrics* may be regarded as the dawn of a new era in this department of medicine. The way has been cleared and described, and we have no doubt that the path will now be trodden by many, more or less fitted for its farther exploration; but, most probably, to Dr. Smith himself we must in the mean time chiefly look for farther expositions. He has *done* what no man before him even *attempted*; though in saying this, it would be unfair to pass over in silence a valuable paper, by Dr. S. S. Alison, *On the Contractions of the Uterus in Labour*, which appeared in the *Edinburgh Monthly Journal*, for February, 1842, p. 97.[1] The object of that paper was to show the reflex nature of uterine action. We need hardly say, that primarily, science is indebted for the germ of the matter to Dr. M. Hall, who, in his *Diseases and Derangements of the Nervous System*, declared "that the whole question of abortion and parturition, and, in a word, of obstetrics, as a science, is one of the true spinal system."

In conclusion, as regards Dr. T. Smith's work, let us add, that while it is brilliant and masterly as an exposition of the obstetric applications of reflex physiology, it is also of extreme value as a guide to sound practice. Those only who use the term *practical* in mistake for *empirical*, can insinuate that the work now analyzed is not strictly and pre-eminently practical. In truth, we know of no treatise on obstetrics which is more likely to make a skilful obstetrician of any man who is well grounded in the truths of physiology, and endowed by nature with adequate talents of observation. The superficial, the indolent, and those who cannot observe for themselves, need not open the book; and we may add, need never hope to practise any department of medicine with comfort to themselves, or benefit to others.

Lectures on the Diseases of Infancy and Childhood. By Charles West, M.D., Senior Physician to the Royal Infirmary for Children. pp. 488. London: 1848.

We believe that we have a pretty good acquaintance with the systematic treatises on the Diseases of Children, which have been published in this and other countries; and therefore feel competent to say of Dr. West's book, that it is not approached in excellence by any English, and not surpassed by any foreign work on the same subject. Some of the departments—especially the lectures on the Exanthemata—require filling up; and we expect to see, in a second edition, many additions and improvements throughout the volume. Taking it, however, in its present state, it is decidedly the best English Treatise on the Diseases of Children. We would suggest the discontinuance of the form of Lectures, and the addition of a copious, carefully-compiled alphabetical index.

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[1] Dr. S. S. Alison's paper was read before the London Medical Society, 6th December, 1841, on which occasion an interesting discussion took place, which is reported in the *Edinburgh Monthly Journal* for 1842, pp. 80, 81.

CRITICAL DIGEST OF THE BRITISH AND FOREIGN MEDICAL JOURNALS.

ANATOMY AND PHYSIOLOGY.

DEVELOPMENT AND COMPARATIVE ANATOMY OF THE ORGAN OF HEARING. BY J. D. MACDONALD, ESQ.

In a series of investigations made on the Organ of Hearing in very young kittens, with a view of ascertaining the mode of development of its several parts (especially the osseous portions), the writer has observed the following points.

"First, with regard to the *ossicula auditûs*, that ossification proceeds from without inwards; *i.e.* the *malleus* is first completed, and next in order comes the *incus:* while the *stapes* is found soft and flexible at birth, and bathed in a thick albuminous fluid, which fills the tympanic cavity. Ossific matter seems first to be deposited in the central part of these small bones, and subsequently extends to their extremities.

"Secondly, respecting the labyrinth, the vestibule was completely ossified at birth: while the *cochlea* presented an osseous saccule, communicating with the vestibule, and having a central bony core corresponding to the *modiolus* and *lamina spiralis ossea*, all the rest of the organ, with the exception of a small portion of the spiral tube composing it, was membraneous.

"The semi-circular canals were yet imperfectly ossified, being only complete where they open into the vestibule. They were imbedded in a semi-cartilaginous substance, composing the base of the petrous portion of the temporal bone, which is united to the mastoid and squamous divisions at this period by a kind of articular surface.

"As ossification in the semi-circular canals proceeds, the modiolus and lower portion of the spiral lamina are being completed, so that they appear, as above stated, like a bony core in the centre of the saccule of the cochlea, and connected with its walls by two membraneous laminæ, placed one above the other, which wind edgeways spirally round it. One of these laminæ forms, with the modiolus and saccule, part of the *parietes* of the common tube, which, by its turns, or *gyri*, mainly composes the cochlea. The first part of this tube—*i.e.* somewhat more than the first half turn—is completely ossified at birth, but from this point forward it gradually becomes deficient in bony matter; the membraneous *lamina* remaining unossified towards the summit of the cochlea, where it terminates in a kind of *hamulus* or hooked extremity, the convexity of which is attached to the side of the cupola, while the concavity is free, looking towards the centre of that space.

"The other *lamina* above mentioned lies superior to the last described, and retains its character as the membraneous spiral lamina externally, or where it is attached to the walls of the saccule; but internally, where it is united to the *modiolus*, it becomes bony, and thus the osseous spiral lamina is formed. In this latter, bony matter shoots forth in irregular rays from the central axis, progressing in a direction from the base towards the apex of the cochlea: a well-defined line may be seen running longitudinally upon the membraneous lamina, where the osseous portion remains imperfect, which mechanically (?) limits its future extent. This lamina gradually inclines towards that first noticed, and about the middle of the second turn of the cochlea comes in contact with it by its outer edge, and eventually completely lies upon it; and thus, continuing onwards, forms the upper surface of the *hamulus* above described, at the free border of which the two membranes become continuous.

"The vault of the cupola is very extensive, as the modiolus does not reach farther than the root of the *membraneous hamulus*, where a little bony hook may be found to exist. This is the true homologue of the hamulus as observed in the human subject, and beneath it is observable the helicotrema proper, a very small and elongated aperture, which it bounds externally; the aborted central axis, that is here membraneous or imperfectly ossified, forming its inner margin. This small hole leads to the scala tympani, while the open passage beneath the membraneous hamulus leads from the cupola into the scala vestibuli.

"The extent of the scala vestibuli and scala tympani may be considered as equal; for what the former gains at the apex of the cochlea in forming the cupola, is compensated for in the latter by its extension outwards at the base of that organ, where it communicates with the tympanum. But the calibre of the two scalæ is very different when they are contrasted at any part: thus, the scala vestibuli varies very little in its entire extent; while the scala tympani, from being very capacious at its lower part, tapers away towards its upper extremity, and ultimately becomes so small and compressed, as almost to lead to the conviction that it was obliterated before it could reach the helicotrema. This, of course, results from the approximation of the true spiral lamina to that which enters into the formation of the common tube of the cochlea, as already described.

"The eminence of the internal wall of the tympanum, called the promontory, projects outwards considerably, in consequence of the bulk of the scala tympani at its base. This fact would lead to the supposition that the fenestra rotunda must also be proportionably large; and such is the case, it being about three times as large as the fenestra ovalis, which is a mere slit in appearance.

"Looking upon the apex of the cochlea, the arch of the cupola having been removed, two openings may be observed (briefly alluded to above): first, the helicotrema proper, which lies towards the central axis on the inner side of the *osseous hamulus;* and, secondly, the upper orifice of the scala vestibuli, separated from the former internally, and bounded above by the concave edge of the *membraneous hamulus*, the walls of the saccule, and the upper surface of the spiral lamina, soon after the commencement of the second gyrus circumscribing it externally and inferiorily. These openings may be respectively named the cochlear and vestibular helicotremata, the latter being many degrees larger than the former; so that, should a fluid be poured into the cupola, it will pass into the vestibular rather than the tympanic *scala*.

"The greater par of the interior of the labyrinth is lined by a dense and apparently unorganized deposit of earthy matter. The bony spiral lamina, under a low magnifying power, presented the appearance of a close and irregular network, having a radiating arrangement of its meshes from the centre, or modiolus, to the outer border of the lamina, the density of which increases from without inwards. The centre of the modiolus was hollow, containing the cochlear nerve. The bony tubules which envelope the nerve filaments in the perfect organ, were not formed at birth. The orifices by which the cochlear nerve reaches the spiral lamina, and the grooves which the nerve tubes occupy in passing to the lamina, tend towards its under surface. This fact, which is of great importance in the study of the physiology of the organ, has been demonstrated by Dr. Todd and Mr. Bowman in their Physiology, and it would lead to the supposition that the cochlear nerve is thus especially adapted to receive the vibrations communicated to the scala tympani through the *membrana fenestræ rotundæ*. The scala vestibuli, as a means of communication with the vestibule, answers other purposes, which we have noticed in a former communication.

"The common tube of the cochlea in a kitten forms very little more than two complete turns or gyri. The transverse measurement of the entire coil at its base appears to equal the vertical. A strong contrast is believed to exist

between the cochlea of the cat and dog in this respect, by some anatomists, who consider the organ in the latter animal to be much more prominent towards the tympanum than in the former, its vertical diameter exceeding the transverse. This, however, has not appeared to the writer in the cochlea of the puppy of a black and tan species of terrier, which he has had the opportunity of examining for comparison with that of the kitten; and so near do the characters of both seem to correspond, that a perfect idea of one may be formed from a description of the other. I may be allowed here to observe, that the best way of preparing the cochlea for examination is, to separate the petrous from the other portions of the temporal bone (this may be very easily done in the very young animal, as it is only connected with them by a cartilaginous material), and setting it aside in its recent state (*i.e.* without maceration) to dry; by this means the fluid matters will evaporate, and the internal parts will become tough, and fit for dissection. Of course the vessels and nerves would require a special preparation for their investigation; and the more minutely injected, and the fresher the organ is for these purposes, the better; but, for the study of the osseous and membranous parts forming the frame-work of the cochlea, simple drying will suffice; so that, with a moderately strong needle, it may (when dried) be opened at the apex, and so the dissector may proceed downwards to the base, detaching its external brittle walls from the tough membraneous laminæ, which will be found to hold their original position. Should the precaution of commencing at the apex be not attended to, the organ may give way in parts which it might be an advantage to preserve.

"The writer first examined some cochleæ of young kittens, which had been some time subjected to maceration, and the result was, that the spiral lamina and modeolus having come quite away, the appearance presented was as though no spiral lamina had existed at the period of birth, and a spiral sulcus had supplied its place. However the doctrine may prevail, that the part called the modeolus has no real existence,—as Ilg and others affirm, who consider it to be nothing more than the inner wall of the common tube,—it is certain that, in the kitten, before this tube is completely ossified, a bony pillar or core occupies the axis of the cochlea." [*London Medical Gazette*, 13th April, 1849, page 637.]

ANOMALIES IN THE OPHTHALMIC NERVES.

At the ordinary meeting of the Royal Medical Society of Copenhagen, on 30th March, 1848, Professor Svitzer exhibited two cases of variation in the Ophthalmic Nerves, which, he believed, had not hitherto been observed. In the first, there was seen a thick connecting branch between the third and sixth pair, and also four long roots of the lenticular ganglion, three being from the nasal nerve, the fourth from the superior fasciculus of the oculo-motor nerve. In the second, there was observed a similar branch of connection between the third and fourth pair, with absence of the short root of the ciliary ganglion. From the nasal nerve there proceeded two long roots to the ophthalmic ganglion; the anterior of which, after again dividing into two branches and being united with a branch from the ciliary nerve, passed to the sheath of the optic nerve, and formed an elegant network by anastamosing with the ciliary nerves. Both these cases are delineated in a work on the Nerves of the Eye, published by Professor Svitzer. [*Bibliothek for Læger*, July 1848.]

PRACTICE OF MEDICINE AND PATHOLOGY.

EMPLOYMENT OF MANGANESE IN MEDICINE.

The *Revue Médico-Chirurgicale de Paris* for June 1849, contains a reprint of the practical portion of a work lately published by M. Hannon, entitled *Etudes sur la Manganese*, in which he asserts the utility of this metal in cases of anæmia. We translate the article slightly abridged.

Manganese and iron are almost constantly found united in the same minerals, and can be separated with difficulty. Again, iron is not always efficacious in chlorosis, and fails in curing anæmia arising from cancers, from tubercles, from prolonged and abundant suppuration, etc. In these cases, it cannot be the iron that is deficient in the blood, but some other ingredient; and it is probable that iron is united to Manganese in the blood; and that cases of anæmia, unsuccessfully treated by iron, might be cured by Manganese. M. Hannon first tried the effects of this agent on himself. He took at first a grain of the carbonate of Manganese daily, increasing the dose to four grains by the end of the first week, and to eight grains by the end of the second. At the end of a fortnight, he experienced symptoms of plethora; the appetite increased, the pulse became stronger, and the colour of the interior of the eyelids was heightened. He then administered Manganese to some anæmic patients; some of them experienced nausea for two or three days, after which the medicine was tolerated. In a short time, its beneficial effects became manifest in the increase of colour, in the fuller and more frequent pulse, in the energetic movements, and general improvement of all the functions.

The presence of Manganese in the blood was discovered by M. Millon, who presented a memoir on the subject to the Académie des Sciences of Paris. His observations have been confirmed by M. Hannon.

Case I. Mademoiselle J. was of an extreme paleness; the skin of the forehead, nose, and chin, resembled old white wax in colour, and appeared deprived of vascularity; the cheeks scarcely possessed more colour. The lips and conjunctivæ were deprived of their natural colour. The superficial veins of the hand and arm were imperfectly filled; on the back of the hand, they presented a pale violet shade. Slight pressure on them expelled the blood, which only returned slowly. The eyes had a remarkable expression of weakness and languor. Auscultation discovered a bellows-sound in the region of the heart and great arteries. The rhythm of the heart's action was irregular; and but feeble pulsations could be felt, on placing the hand over the præcordial region. The patient was subject to attacks of syncope; and was often seized with palpitation and breathlessness while walking. In ascending stairs, she was obliged to sit down and rest, and was then often seized with syncope. She complained of a painful sensation in the epigastric region; the appetite was lost, and she had a great disgust for all restorative aliment. There was habitual constipation. There was extreme moral depression: the muscles were becoming weaker every day, and the least motion brought on palpitation, syncope, extreme dyspnœa, or perspiration.

Preparation of iron, and a restorative regimen, were first employed, but without success. In a month, the patient was sent into the country, and desired to take some of the pills of Bland (which contain iron); she returned to Brussels weaker than when she set out. Her feet swelled in the evening. The patient was then directed to take one of the following pills daily before breakfast, and another before dinner. Extract of cinchona, carbonate of manganese, of each a drachm. Mix, and divide into four-grain pills. After she had used these pills for a fortnight, the cheeks and conjunctivæ regained their colour, and the swelling of the feet disappeared. The following pills were then ordered. Sulphate of manganese, carbonate of soda, of each a drachm; fresh charcoal, honey, of each a sufficient quantity to make a mass, to be divided into four-grain pills. A fortnight after the employment of this medicine, the bellows-sound had disappeared; the pulsations of the heart were strong and loud; and an energetic impulse was felt on applying the hand. There was no syncope; and the appetite had returned. The dose of the pills was increased; and, a month after, menstruation occurred, and the patient became plump, and able to bear much exertion. She digested and slept well—in a word, was cured.

Case II. Mademoiselle —— had menstruated at twelve years: the cata-

menia had been always regular and abundant, and her health excellent, till she was eighteen years old. From this time, however, her cheeks lost their colour, her lips their freshness, and her eyes their vivacity. She became subject to excessive nervous susceptibility, and to *malaise;* and, from being lively and gay, she became blunt and rough. This state of the nervous system increased in intensity: she experienced every moment pains in various parts of the body; sometimes in the epigastrium, sometimes in the thigh, sometimes in the loins. Digestion was impaired, and the bowels acted sluggishly. The catamenia appeared irregularly, and in diminished quantity; sometimes only as a simple leucorrhœal discharge. Various preparations of iron were tried, but all were insupportable to the patient, producing derangement of the stomach. Pills were then administered, made of carbonate of manganese, with powder of cinchona. These at first produced nausea, which was soon restrained by the use of a potion prepared with poppies; the pills being still continued. The dose of the manganese was gradually increased; and under its use, the gastralgia gradually disappeared, the nervous disturbances became less general and frequent, and the colour of the face reappeared. The preparations of iron were now administered, and easily tolerated; menstruation became abundant and regular; and the patient recovered a healthy appearance.

Case III. Madame L., aged 40, a nurse, is often obliged to remain from home at night; and being unable to procure sufficiently nourishing food, fell gradually under a state of marasmus. For several months, the catamenia were replaced by a leucorrhœal discharge. A strengthening diet and iron were prescribed. She took the medicine, but had no roast meat nor beer. Six months passed away without improvement. It was evident from several observations that the iron was producing no effect. Pills of the carbonate of manganese were then ordered, and borne by the patient. For a month, there was but little improvement; but all at once the patient said that she felt stronger, and that the leucorrhœal discharge had ceased. From this time she regained her colour; the yellow tint of her face disappeared completely, as did also the abdominal and lumbar pains which she experienced. At the end of a month, Madame L. was completely re-established, although she had not used the strengthening regimen prescribed: pulse formed her common food. She afterwards returned to her fatiguing occupations; during the night, she attended deliveries and watched patients; during the day, she employed herself as a laundress.

Case IV. G. L., aged ten, of a lymphatic temperament, wounded his left arm. The humeral artery was wounded, and gangrene of the hand followed. The separation of the eschars produced a tedious suppuration, which continued for three months, and weakened the patient. The mucous surfaces were extremely livid; the face wore an expression of terror; the eyes were hollow. The cough, in any other circumstance, would have led one to suspect phthisis; the sputa were nummular, and there were nocturnal fever and sweats. On auscultation, rhonchi were heard all over the lungs; but no pectoriloquar, nor cavernous respiration. Sulphate of quinine, with syrup of cinchona was prescribed; but the patient, after having tasted the medicine, obstinately refused to take it. The tannate of quinine, an insoluble, and hence tasteless substance, produced no result. The digestive organs were extremely weak; the food was passed almost untouched in the stools. A grain of carbonate of manganese, with extract of gentian, and opium, was ordered to be taken daily. The diarrhœa gradually ceased; the appetite reappeared; and digestion was restored. The carbonate of manganese were then given alone, in doses of a grain daily. The patient improved in condition from day to day: his flesh regained firmness, and his skin colour. The parts denuded by the separation of the eschars were washed daily with an alcoholic solution of tannin, and ceased to suppurate; cicatrisation soon took place, and the patient was completely healed.

Case v. Mademoiselle ——, two of whose brothers and a sister had died of phthisis, was troubled with a severe cough, dry in the evening, but accompanied in the morning with variable sputa, frequently streaked with blood. It was severe at night, and interrupted sleep. She experienced transitory pains in various parts of the thorax, especially between the scapulæ, and often in the right scapular region. Percussion elicited a dull sound under the clavicles, especially under the right; on auscultation, small crepitation was heard in that region. During the night, she had very copious sweats, by which she was *inundated*. The hands remained moist. The pulse was always between 90 and 100 in the minute. In spite of frequent epigastric pains, her appetite was considerable. The tongue was red and dry: the thirst excessive. The voice was often hoarse; and the least exertion brought on dyspnœa. She was in an anæmic state. Iron, with opium, was prescribed; but it increased the cough, and brought on obstinate constipation. Syrup of the phosphate of manganese was then given, with cod-liver oil; the latter being added rather to prevent the contact of air with the manganese, than from any expectation of its producing good effects. The constipation ceased; and the cough became more bearable, and ceased in a fortnight. The patient then began to recover *embonpoint*. A month after, the knuckles assumed a very remarkable brick-red colour, which has continued up to the present time,—a period of nearly a year and a half. This patient took 3 *gros* (216 grains) of phosphate of manganese, in doses of three grains daily.

Case vi. Madame R. was affected with cancer of the uterus. She complained of remittent pain in the hypogastric regeion, and suffered much while at stool. In the evening she was troubled with severe lancinating pains, which often continued through the night. She was excessively weak, and of a pale yellow hue. She was troubled with palpitation, and a *bruit* was heard in the carotid. The feet frequently swelled. Syrup of the iodide of manganese was given, with syrup of horse-radish, for several months. The pains did not leave her, but the anæmic appearance completely disappeared. To calm the pains, opium, with extract of hemlock, was prescribed; and the patient became apparently cured.

Case vii. Mademoiselle M., aged 14, of a scrofulous constitution, had glandular enlargements in the neck, ulceration of the transparent cornea of the left eye, and caries of the first phalangeal bone of the index finger of the right hand. Being the daughter of a peasant, she had lived exclusively on vegetable food; but was ordered to take meat, and to drink beer. Syrup of the iodide of manganese was given in doses of a spoonful two or three times a-day. Under the influence of this, and her improved diet, she became less lean; soon after, the cornea regained its transparency, having been washed with a lotion containing gr. ss. of nitrate of silver to an ounce of distilled water. The suppuration of the carious bone ceased, and the finger was cured.

Case viii. M. G. B., aged 38, had been treated with mercury for some years, for constitutional syphilis. The bones were sound; the skin was affected with all kinds of eruptions; the tongue had long been the seat of an obstinate tumour; and there were syphilitic ophthalmia and iritis. Fumigation and iodide of potassium were persevered in for several months, but without effect. Iodide of manganese was then given, with syrup of sarsaparilla; and in a month, the patient was completely healed. He was directed to continue the use of the manganese; and, as he has not since applied for relief, it is probable that he has had no relapse.

These eight cases have been selected from a number of similar ones, and show the efficacy of the new remedy now proposed. Manganese has in all cases produced a more rapid effect than iron, in cases of simple anæmia. In the four forms of anæmia cited, all the cases had resisted iron, and all yielded to manganese. The other cases are respectively of phthisis, cancer, scrofula, and syphilis;—all inducing almost irremediable cachexia, and all rapidly

alleviated by manganese. The effects of the manganese, as observed in Case v (phthisis), are remarkable.[1] Iron seldom produces a similar result; if it improves the state of the blood, it increases the cough; so much so, that many practitioners abstain from its use in phthisical cases. In all the scrofulous cases, the iodide of manganese, by its salutary and rapid influence, was proved superior to the iodide of potassium. The persistence of the cures obtained by manganese, in comparison with those produced by iron, is very remarkable: no cases of relapse have been observed by M. Hannon. The quantity required to be taken, in order to produce the desired result, is far from being so great as that of iron.

SMALL-POX AND VACCINATION: GENERAL SUBJECT OF VITAL STATISTICS.

Notwithstanding the acknowledged efficacy of Vaccination as a preventive against Small-pox, and in spite of the efforts made by Parliament, the medical profession, and the parochial authorities, to disseminate the great discovery of Jenner, it is truly astonishing how many objections and prejudices still prevail upon this subject throughout country districts; more especially amongst the uneducated part of the population. Every practitioner knows the truth of this remark; and in proof of its correctness, he might confidently appeal to daily experience. Numerous illustrations in support of such an opinion could be easily quoted; but it will suffice at present to refer to the two recent Quarterly Reports of the Registrar-General, to show how little Vaccination is even now practised in many parts of England. In various districts, where Small-pox has lately proved very fatal, it is not stated whether the victims had been previously vaccinated; but in several localities, the registrars report, that a large proportion of the deaths by small-pox, during the last six months, occurred in persons *not vaccinated*. After a cursory examination of the official documents just mentioned, it appears, that not less than 240 individuals actually died under the above circumstances. Doubtless, had all the facts been known in regard to many other deaths by this malignant eruptive disease, the aggregate number would have been very considerably greater. However, as that point cannot now be ascertained, it is interesting to notice some of the places in which these mistaken prejudices against Cow-pox have most prevailed. Portsea island, in Hampshire, takes the first rank in this respect; and here the natives seem so inimical to Vaccination, that actually eighty-seven persons died in that benighted locality from Small-pox, during the first three months of the present year, not one of whom had ever been vaccinated! whilst in the summer quarter, ending the 30th of last June, fifty-five persons were also carried off from small-pox. But as nothing is said in the Report respecting previous Vaccination, we arel eft in ignorance respecting this point; although the presumption is, that few, or perhaps none, were in that way protected. Leicester comes next, and furnished thirty-two fatal cases of a similar character. Then Bristol, where twenty-six instances occurred. In Dorchester there were eighteen examples; whilst the small town of Reading supplied seventeen cases. These facts, as likewise many others, almost exceed belief; and indicate a degree of ignorance among the population, which can scarcely be believed to exist at the middle of the nineteenth century: but so it is. When it is remembered, that in addition to the above statement, in many of the fatal cases occasioned by small-pox, no notice is given respecting previous Vaccination, whether it was employed or neglected, the proportion must, in all likelihood, be assumed to have been much greater. Truly knowledge has yet to be much more diffused, before the common people can be induced to adopt Vaccination as the only safe antidote against Variola.

[1] Notwithstanding the scepticism of M. Hannon, as to the therapeutic utility of cod-liver oil, we think that much of the benefit derived in this case is to be ascribed to the use of this medicine.

Besides the interesting information just alluded to, the Quarterly Reports contain also other matters well worthy of record. For instance, in the parish of Walton le Dale, Preston, it is stated, that in sixty-five deaths reported during the summer quarter of the current year, seventeen of the deceased had no medical attendant. A similar statement is likewise made in reference to Thornton parish, in Bradford, where, of ninety-eight deaths which occurred during the same quarter, as many as thirty-nine individuals died having had no medical advice. One can scarcely believe such deplorable apathy or ignorance to prevail; but on such an authority as the above, it must be true. Contrasted with such distressing circumstances, it is gratifying to read, that in Lockton parish, Pickering (situated in the North Riding of Yorkshire, and having a population of 500 persons), only one death occurred during six months. After perusing these, as well as other interesting and instructive statements, the Registrar-General's Reports, although universally admitted to be most useful, cannot be too highly estimated, when small-pox, typhus, cholera, scarlatina, or any other malady, is the subject of investigation. To Mr. Farr, the public and the medical profession are deeply indebted, for the instructive manner in which he periodically digests and promulgates the information mainly furnished by the latter. England now stands pre-eminent amongst all civilized nations, in respect of medico-statistical documents; and should Scotland, Ireland, and the chief British Colonies, follow so excellent an example, the facts collected would soon suggest social changes of the highest importance to all classes of the community.

TRANSFORMATION OF A KIDNEY INTO A VAST CHAMBERED POUCH, FILLED WITH PUS, AND COMMUNICATING WITH THE LUNG.

M. C. Bernard, in the name of M. Bauchet, presented to the Société de Biologie of Paris, on the 14th of July 1849, a greatly enlarged kidney, taken from a woman who had been under the care of M. Monneret. It formed a pouch, divided into seven or eight compartments, filled with a greenish pus. One of the compartments passed through the diaphragm, and adhered to the lung. Two calculi were found, one of large size, in the ureter, near the pelvis of the kidney; the other small, in one of the sacs. The lining membrane of the sacs was examined microscopically by M. Monneret, and found to consist of nothing but condensed cellular tissue. M. Chaussat mentioned, that M. Monneret had been able to diagnose the communication of the kidney with the lung, from the existence of uric acid in the sputa. [*Gazette Médicale de Paris*, 18th August 1849.]

URTICARIA IN INTERMITTENT FEVER.

The following observation (*Gazette des Hôpitaux*, 28th July 1849) is incomplete, inasmuch as there is nothing said as to the presence or absence of rheumatism, with which Urticaria has a remarkable relation, as was noticed at page 85, in speaking of the article "Scarlatina Rheumatica", of Dr. Copland's *Dictionary*.

Professor Cruveilhier had a patient, in his wards, with Intermittent Fever, of the tertian type. The man had come from a marshy country, and had been previously the subject of this disease, which had left behind it a notably enlarged spleen. He had taken a large quantity of sulphate of quinine. When in hospital, as well as before admission, it had been remarked, that immediately after the cold stage, as the hot stage set in, there appeared a perfectly characterized eruption of urticaria, accompanied with intense itching. It continued up to the end of the sweating stage, when it entirely left him. M. Cruveilhier remarked at his clinical lecture, that though urticaria had been mentioned in books, as appearing in the course of intermittent fevers, it was nevertheless an uncommon occurrence.

SURGERY.

ANNULAR STRICTURE OF THE RECTUM.

Several communications have lately appeared in the *Gazette des Hôpitaux*, containing some valuable observations made by M. Robert, of the Hôpital Beaujon, on Circular Stricture of the Rectum. The Number for 19th June 1849, contains the following summary:—

Seat of the Stricture. A remarkable circumstance is, that the seat of the stricture is almost always the same; viz., about six or eight millimêtres from the anus. M. Robert has naturally endeavoured to discover the cause of this uniformity, but as yet without success. Houston has described a valvular stricture at this part, which bears his name, and which he supposes to be the primitive seat of the disease; but this valve has been several times sought for in vain. However, in a woman who died of chronic diarrhœa, M. Robert discovered, at the point indicated by Houston, a sort of blackish inflated *valvula connivens*, which, if it existed in a large proportion of subjects, might be considered as the special seat of the strictures to which he refers. This is a subject for further investigation.

Causes. One case only of the annular strictures which M. Robert has had to treat, occurred in a male. The female sex, therefore, appears to have a marked predisposition to this affection. The exciting causes it is not so easy to determine.

In some cases, labour, whether difficult or not, has appeared to be the starting point of the stricture: at least, the first symptoms have appeared after delivery. In other cases, a chronic dysentery has preceded the organic lesion, and has continued after its formation. Inquiry has naturally been directed to discover, whether the patients have been at any time affected with those venereal symptoms which are called *antiphysical*, but more properly *antiphysiological;* M. Robert professes himself able to arrive at only a negative conclusion on this point. But the assertions of patients on this subject are so rarely in accordance with truth, that doubt must necessarily be entertained on the influence of such a cause.

Diagnosis. When the stricture is not very strongly marked, the diagnosis can present no serious difficulty. The finger can always, with more or less ease, be brought to reach the stricture, and allows it to be easily discovered, when the anatomical change consists in a circular band, a few millimêtres in thickness, above which the intestine is found of its normal structure and consistence. When exploration by the finger is followed by examination with a bi- or tri-valved speculum, there is seen a diaphragmatic ring, red, equally granular, commonly of a fibrous consistence. Sometimes this ring presents some superficial ulcerations, which never have a bad appearance. It may also be of a more delicate structure; and, in such a case, has been torn by the speculum. In no case, except when an abscess already exists in the cellular tissue of the pelvis, surrounding the rectum, is the stricture closely united with the neighbouring structures; they can be felt by the finger to be supple, and to permit the strictured and indurated part to be moved. These symptoms are quite sufficient to aid us in distinguishing this form of stricture, both from those which have their seat without the rectum, and from those which have arisen in the intestine itself.

Complications. These are rather common, and form a powerful obstacle to treatment. Sometimes they have existed before the stricture, and are generally then most serious; sometimes they occur subsequently, and are removed with it. Among the latter are rectal hæmorrhages, which M. Robert has sometimes observed, but which he has never seen to assume an alarming character. Suppurative inflammation may occur, and give rise to abundant suppuration: but this accident is not very terrible; it can only occur in old cases, where there are such slender hopes of cure as have not yet been pre-

sented. A much more troublesome complication is fistulæ, which may exist above the stricture, between the rectum and the vagina, or between the rectum and the cutaneous surface. These fistulæ scarcely oppose the cure of the stricture, but persist some time after it, with a severity which is peculiar to them. In one case of stricture, there was observed at the same time an alteration in the structure of the sacrum. In a case (a male) observed by M. Robert, the rectum was perforated above the stricture, and a stercoral abscess formed, which traversed the sciatic notch, and opened in the popliteal space. But such cases are rarely the result of stricture; they most commonly precede it, and it is rather the structure itself which forms the complication.

Prognosis. When annular stricture is properly treated at an early period, there is no serious danger. But when it is left to itself for a considerable time, its severity is considerable, and it very often even ends in death.

Treatment. Several means have been proposed for the treatment of stricture of the rectum, but without sufficiently distinguishing one kind from another. In the form under consideration, M. Robert prefers destructive cauterization to all other remedies. He says that dilatation, which is generally employed, is insufficient, and not unattended with inflammation. He has seen a case, in the practice of M. Breschet, in which it caused violent inflammation, which rapidly extended to the peritonæum, and produced death. On other occasions, dilatation has produced hæmorrhages, which, without being very severe, have been distressing to the patient, and have produced a very inconvenient degree of weakness. The treatment by means of a cutting instrument is much more dangerous, and does not always produce the expected effects. For these reasons, M. Robert prefers destructive cauterization, with Vienna paste; and his observations tend to prove the success and harmlessness of this treatment.

CASE OF ABSCESS OF THE SPERMATIC CORD.

By William Philpot Brookes, M.D., Surgeon to the Cheltenham General Hospital and Dispensary.

[The following case was forwarded to us as an *original article* by the author; but this arose by mistake. It has appeared as an original communication both in the *Lancet* and *Medical Gazette*. Authors ought not to send their papers to more than one Journal.]

R. W—, aged 51 years, of active, spare habit of body, irritable and very anxious disposition, enjoyed uninterrupted good health till within the last few months. Six months back, after much pain and suffering, he passed a large-sized gravel stone: after that time his usual good health was restored.

On Wednesday, June 28, 1848, I found the patient suffering from fever, constipation, pain on pressure in the abdominal region, and extensive pain around the margin of the ribs on the right side. I learnt that he had suffered for several years from a double inguinal hernia, and had constantly worn a truss. There was, on the right side, above Poupart's ligament, a round, cup-shaped depression, as large and deep as a small saucer, caused by the pad of the truss slipping out of its proper situation: and extensive pressure having been kept up with the pad, which was hard and convex on this spot, he complained of excruciating pain, and could barely allow it to be touched. The heat of the part was far above the natural temperature, and the skin was of a reddish-brown hue; the pulse was very quick and sharp; bowels had not acted for two days; tongue foul; hernia easily reduced. I ordered him five grains of calomel to be taken directly; a black draught in the morning; and a dozen leeches, with warm fomentations and poultices, to be applied to the abdomen afterwards. An enema to be given at bed-time, if he had had no evacuation before that time.

June 29th. Bowels not opened; the enema passed away without any fæcal

matter. Great pain over the whole abdomen and around the edges of the liver; tongue white and foul; pulse quick and wiry; urine scanty and high-coloured. To take two grains of calomel, and half a grain of opium, every four hours. An enema to be given directly; twelve leeches to be again applied over the bowels, and afterwards warm poultices to be kept constantly applied.

30th. Pain in the abdominal region increased since last night; bowels opened twice; countenance anxious; pulse sharp, wiry, quick, and small; tongue foul. To repeat the calomel and opium; to be bled until the system feels the effect of it, and the pain becomes less.

July 1st. Pain in the abdomen and around the liver much diminished after the bleeding; tongue dry and red in the morning, but at night it became quite moist. Repeat the calomel and opium.

2nd. Pain has entirely ceased over the bowels and liver, but at the spot where the truss was worn it is still very acute and painful, and will not admit of any pressure being used. The part is also swollen and hot; intense hiccough supervened this morning, which gives him great uneasiness, and makes him irritable and anxious; more fulness on the spot where he complained of pain, and a swelling of a pyriform shape, extending from under Poupart's ligament, down into the scrotum, appeared on this day, following the course of the spermatic vessels from the ring. The cord is situated behind the swelling, and feels hard, tense, and most painful to the touch. The hernia is not discoverable. Tongue dry, glazed, and red; but at night it moistens, and has done so for the last few evenings; pulse 120, quick and sharp.

3rd. Hiccough continues much the same, and he rarely gets an interval of five minutes without it; he has also every two or three hours several fainting paroxysms, in which he can scarcely draw breath, and must be supported in bed. When in these attacks he appears as if in a dying state; and they last for two or three minutes at a time. The stethoscope indicates no abnormal signs of disease in any of the viscera or vessels of the chest. The tumour in the groin is hard, red, and painful to the touch; does not fluctuate, nor does pressure exert any influence on it; no intestine can be discovered down. Twelve leeches to be applied to the swelling, and warm fomentations afterwards; bowels opened twice to-day. He is in a most exhausted state. To take beef-tea, brandy-and-water, and the following mixture:—Two drachms of compound spirit of sulphuric ether; water, six ounces; one tablespoonful every two hours.

4th. Tongue cleaner, but red and shining; pulse small and wiry, 110; hiccough continues much the same; paroxysms of difficulty of breathing and fainting less frequent; pain and fulness in the region of the groin increases; but the swelling is softer and more boggy than it was yesterday. Spirit lotion to be kept applied to the part; and one grain of quinine, with compound spirit of sulphuric ether, to be taken every four hours. Bowels are regular, and urine plentiful.

5th. Diarrhœa set in to-day; tongue dry and shining in the morning, moist at night; sleeps but little; hiccough continues the same; paroxysms of difficulty of breathing less frequent, and not so intense. Omit the mixture of quinine; and take ten grains of Dover's powder at bed-time; the chalk mixture, with aromatic confection, every four hours, until the purging ceases.

7th. Diarrhœa ceased last night. Pulse sharp, wiry, weak, and 90; swelling in groin and scrotum increases, and is most painful when touched. Spermatic cord situated behind is increased in size, hard, and painful. Hiccough less, but still troublesome; countenance less anxious.

8th. Hiccough increasing in frequency; pulse weak, but less sharp and wiry, 80; his strength augments; paroxysms of fainting had entirely left him since the 5th. To have plenty of animal food; brandy-and-water frequently. Towards the evening I was sent for in great haste, when I found

my patient in a dreadful state of collapse, drawing his breath hard, and a cold perspiration streaming from his forehead and face; I considered him, in fact, in a dying state. He could just swallow, and by the use of ether, brandy, and ammonia, he gradually rallied. Warm poultices to be kept applied to the swelling in the groin.

10th. Tumour very painful; he will not allow it to be handled much; it extends nearly to the lowest part of the scrotum, and takes quite the shape of scrotal hernia. I can discover no intestine down; bowels well opened; great sickness came on to-day; and slight fluctuation appeared in the tumour, which is becoming red and inflamed. On slight pressure, it gives a gurgling noise, as if it contained air. Tongue red and moist. Continue quinine and ether. On a consultation with Mr. Eves and my patient's master (who had formerly been in practice as a surgeon), it was deemed prudent not to interfere with the tumour to-day, and warm applications were resorted to.

16th. The tumour continued increasing in size up to this day; it appears to have no inclination to point; on pressure it gives an increased gurgling noise of air, and on being filliped it produces a drum-like sound. We can discover no intestine in the scrotum. To-day we thought it advisable to dissect down layer after layer, as if operating for hernia, and after dividing the first two layers, a most offensive fœtid matter escaped, to the extent of nearly half a pint, mixed with bubbles of air. The constitution suffers greatly, and the patient has become very weak, irritable, and anxious. To have beef-tea, brandy, and as generous food as he can, with occasionally porter and port wine, instead of brandy. Continue the quinine mixture.

18th. Tongue moist; pulse fuller and more natural; bowels open; urine healthy and plentiful; sleeps well; a slough coming away from the wound in the scrotum, which discharges about six ounces daily, and smells most offensively. Ten P.M.: The first stage of sphacelus set in this evening on the side of the scrotum, and around the upper portion of the tumour as high as Poupart's ligament; he cannot now feel the parts when touched. Countenance anxious; pulse weaker than this morning. Says he applied a cold poultice to the parts this afternoon. To apply warmth with flannels to it for a few hours, and afterwards barm and charcoal poultices. Tongue moist and red; falls frequently into a collapse. To take egg-and-brandy mixture frequently.

19th. Pulse fuller and stronger; he had rallied much since last night; discharge from the scrotum healthier, and is assuming more its natural colour and warmth; he can now feel it when touched; tongue moist; takes plenty of food, and brandy; pulse stronger, and more resistent; bowels opened, and regular. Continue poultices and quinine mixture.

20th. Takes food well. A large-sized piece of slough was cut away from the scrotum to-day; a copious discharge from the part takes place, but the pyriform swelling in the groin still remains.

21st. Discharge less offensive; air occasionally escapes with it when it is dressed; pulse good; tongue clean; bowels regular.

August 5th. He continues gaining strength and improving; the discharge has nearly ceased; wound in the scrotum very trifling, and he can now walk a little.

Sept. 1st. Now quite well. The hernia comes down on the left side, but not on the right to so great an extent as it did before the attack. Still pain on pressure over the spot where the pad of the truss had been worn. He now wears a common circular truss, with a long oval concave soft pad; this at first gave him some uneasiness, if it moved up a little, but he now uses it with comparative comfort and ease.

Remarks. I attribute the first injury to the inflammatory action set up at the abdominal ring, by the hard pad of the truss having exerted undue pressure on the sheath of the spermatic cord. The inflammation gradually extended to the peritoneum, and caused, at the outset of the attack, the severe

peritoneal symptoms. The hiccough through the first part of the case was very troublesome, and doubtless arose when the formation of pus commenced; as it altogether ceased on its complete formation. Another obscure point in the treatment was, the peculiar gurgling sensation and drum-like sound given out by the tumour, when examined, and which gave us the idea that it was in some measure either dependent on the presence of intestine, or that the tumour communicated with the cavity of the abdomen, and therefore it rendered us anxious not to use surgical interference until more distinct marks of its character appeared. On opening the swelling, the gurgling noise was fully accounted for by the escape of air with the pus; and I doubt not this air was generated by decomposition of the cellular tissue surrounding the parts, and communicating with the sac of the abscess. Another symptom (no stethoscopic examination could reveal disease of any of the organs of the chest), was the peculiar paroxysms of syncope. It is quite impossible for any one but an eye-witness to imagine the peculiar nature and the severity of these attacks; and frequently we considered the patient in a dying state from them. They probably arose from the extreme irritation and exhaustion the system was undergoing while purulent matter was being formed; for, on the complete formation of the pus, they gave way considerably; and shortly after its exit they entirely disappeared. The powers of the constitution in this man were obviously shewn; and the benefit to be gained by freely pushing stimulants, with care, was extremely well marked; for he rallied wonderfully, when all hopes of life had nearly ceased. The stage of sphacelus, which for a few hours appeared, I attribute to the application of a cold poultice to the parts by mistake. The extreme want of constitutional power in the system rendered cold applications positively dangerous. Upon the restoration of warmth it speedily gave way. The hernia on the side of the injury descends far less than on the left, and for the first few weeks it could be barely said to come down at all; in fact, its descent now only takes place on violent straining or exertion. This, I consider, was from the abdominal ring being obliterated in a great degree by the inflammatory action taking place upon and around it. I have found much difficulty (since recovery) in this case, in adapting a truss to the right side, owing to the pain it gave him when he first commenced wearing it; but having now had it constructed with a soft, slightly concave pad in the centre, and elongated nearly half an inch more than usual, he manages to wear it without uneasiness. There is at present some pain on pressure over the abdominal ring, and the cup-like depression from the former pad of the truss still exists. The right testicle and the spermatic cord are quite healthy, and of their natural size.

The similarity of this disease, in many respects, to hernia, is very strong; and the case might easily have, at the onset, been mistaken by an indifferent observer for one of strangulated scrotal hernia.

1st. The swelling descended from the abdomen in the course of the cord, which was also situated behind it.

2ndly. It protruded much while the patient was in the erect posture.

3rdly. It gave some impulse on coughing.

4thly. The gurgling noise, and the drum-like sound of the tumour, appeared as if it contained flatus.

5thly. The costiveness and sickness which frequently appeared, and had not the intestine readily returned, the other symptoms, would, I doubt not, have led to the diagnosis that the whole arose from hernia.

MATERIA MEDICA AND PHARMACY.

PHARMACEUTICAL PREPARATIONS OF MANGANESE.

In his article on Manganese, in the *Revue Médico-Chirurgicale*, from which we have already quoted, M. Hannon gives the following list of the pharmaceutical preparations of this substance.

Oxide of Manganese. This is a very good preparation, especially when obtained by the humid method: it should therefore be made only when it is wanted for use. The best mode of prescribing it, is to add to an ounce of simple syrup half a drachm or a drachm of the hydrated oxide, with some oily emulsion, to prevent the contact of the air.

Carbonate of Manganese is best prepared by dissolving seventeen ounces of pure crystallized sulphate of manganese, and nineteen ounces of carbonate of soda, in a sufficient quantity of water. Double decomposition takes place; an ounce of syrup is added to every seventeen ounces of the liquid, and the precipitate is allowed to settle, in a well-stopped bottle. The supernatant fluid is then decanted off; the precipitate is washed with sugared water, and allowed to drain on a cloth saturated with simple syrup; it is then expressed, mixed with ten ounces of honey, and rapidly evaporated (the access of air being prevented) to a proper consistence for making pills. The sugar and honey oppose the transformation of carbonate of the protoxide of manganese (*carbonate manganeux*) into carbonate of the peroxide (*carbonate manganique*), which is but little soluble in the acids of the stomach. The dose is from four to ten pills, each four grains, every day in chlorotic cases, where iron has not succeeded. The hyperoxidation of the carbonate of manganese may be prevented by adding freshly prepared vegetable charcoal to the pills; it absorbs the carbonic acid which is disengaged by a partial decomposition, and enables the pharmaceutist to dispense with the use of mucilage, which only increases the hardness of the mass.

Neutral Malate of Manganese. This is procured by treating carbonate of manganese with malic acid. It is an eligible preparation, as the base of the salt is in the form of protoxide, and the acid is easily digested. The dose is from two to four grains, in pills.

The preparations of manganese have this immense advantage over those of iron, that they can be combined with vegetable tonics and astringents, namely, tannin, and the substances which contain it, as gall-nuts, rhatany, catechu, dragon's blood, kino, monesia, canella, and cinchona. These can all be combined with malate of manganese. *Syrup of malate of manganese* consists of, simple syrup, ʒxvi; malate of manganese, ʒi; essence of lemon, ʒij: an ounce of syrup contains 29 grains of malate of manganese. *Pills of malate of manganese.* Malate of manganese, gr. xv; powder of cinchona, gr. xv; honey, a sufficient quantity to make twenty pills. *Lozenges of malate of manganese.* Malate of manganese, ʒi; sugar, ʒxi; mucilage of tragacanth, a sufficient quantity. To be formed into lozenges, each twelve grains in weight; each of which contains a grain of the salt.

Tartrate of Manganese is prepared in the same way as the malate, tartaric acid being used. It may be substituted for the malate in all the above-mentioned formulæ; and is used to prepare the following highly tonic syrup. Syrup of tolu, ʒxvii; extract of rhatany, ʒiiss; tartrate of manganese, ʒiiss. Dose, from four to five spoonfuls daily.

Phosphate of Manganese is best prepared by dropping a solution of phosphate of soda into a solution of sulphate of manganese. The precipitate is collected after filtration, dried, and preserved in well-stopped bottles. This preparation may be employed, like the phosphate of iron, in cancerous affections. *Pills of phosphate of manganese.* Phosphate of manganese, ʒiss; powder of cinchona, ʒss; syrup of catechu, a sufficient quantity. To be divided into four-grain pills. *Syrup of phosphate of manganese.* Phosphate of manganese, ʒss; syrup of tolu, ʒiii, ʒiii; syrup of cinchona, ʒv; essence of lemon, ʒiss; powder of tragacanth, gr. x. This preparation must be made quickly, and preserved in a well-stopped bottle. *Lozenges of phosphate of manganese.* Phosphate of manganese, ʒi; sugar, ʒxii. Mix and divide into twelve-grain lozenges, each containing one grain of the phosphate.

Iodide of Manganese is prepared by digesting recently precipitated carbonate of manganese with fresh hydriodic acid; then filtering, and evaporat-

ing, the access of air being prevented. It may more conveniently be prepared extemporaneously, by mixing together an ounce of iodide of potassium, and the same quantity of sulphate of manganese, perfectly dried, and in the state of powder. It is then made into a pill-mass with honey, and divided into pills, each containing four grains of the iodide; which should be kept in a well-stopped bottle. The dose is at first one pill daily, gradually increased every three days, to six pills; the medicine is then omitted for eight days, after which it is resumed. *Syrup of Iodide of Manganese* is prepared by adding concentrated hydriodic acid to a drachm of perfectly pure hydratid carbonate of manganese, until it be entirely dissolved; then mixing with the solution 17 oz. of a syrup of guaicum and sarsaparilla. Doses, from two to six spoonfuls daily.

In cases where iron has not succeeded, it is desirable not to make a sudden transition to manganese, but to combine the two remedies, as in the following formula. Pure crystallized sulphate of iron, ʒxiii.; pure sulphate of manganese, ʒiiiss.; pure carbonate of soda, ʒxviiss.; honey, ʒx.; syrup, as much as may be sufficient to make a mass, to be divided into 4-grain pills. Dose, from two to ten pills daily. The insoluble preparations of manganese should be first used, as the carbonate, phosphate, and oxide; then the more soluble preparations, the tartrate, malate, etc., may be employed. The use of this medicine should not be persevered in so long as that of iron, as its preparations are more rapidly assimilated. Manganese is not, like iron, found in the excrements of persons who take it—at least it is in very small quantity.

In the depraved state of the blood which succeeds intermittent fevers, manganese is useful; it is the most certain remedy for preventing a return of the attacks. Leucophlegmasia and engorged spleen, of long duration, are rapidly reduced by the use of iodide of manganese with syrup of cinchona. The preparations of manganese should also be used in urethro-vaginal catarrh in chlorotic patients, and in chronic blennorrhœa, especially in individuals weakened and rendered anæmic by excess. The salts of manganese, with which we are acquainted, are powerfully astringent, and may be used as external applications, in all cases where other astringents are not indicated. In this respect they possess no other peculiarity.

ANHYDROUS NITRIC ACID.

The existence of Anhydrous Nitric Acid has hitherto been doubted, from the impossibility of obtaining it. M. Deville has succeeded in isolating it, by means of the action of perfectly dry chlorine on nitrate of silver. The product obtained is in the form of prismatic colourless crystals, perfectly bright and limpid, and capable of attaining a considerable size. It melts at 29°·5 cent. (85·1 Fahr.), and boils at about 45° cent. (113 Fahr.): its density at 10° cent. (50 Fahr.) is very considerable. It dissolves in water, with great increase of heat, but without producing any colour, or disengagement of gas. [*Comptes-rendus de l'Institut*, as quoted in *L'Union Médicale*, 13 Mars, 1849.]

COLPACHI BARK—A NEW BITTER.

Dr. James Stark, of Edinburgh, recommends the bark of the Colpachi (Croton Suberosum of Humboldt, and C. Cascarilla of Don), as a light, agreeable, aromatic bitter. The infusion and decoction are best made of half an ounce of bark to one pint of water; and the tincture, of one ounce of bark to one pint of proof spirit. Doses: *Infusion and Decoction*, ounce or half-ounce twice or thrice daily; *Tincture*, one or two drachms; *Extract*, one or two grains. Vide *Edinb. Med. and Surg. Journal*, April, 1849. pp. 410.

REPORTS OF SOCIETIES AND ACADEMIES.

PROVINCIAL MEDICAL AND SURGICAL ASSOCIATION.

THE SEVENTEENTH ANNIVERSARY MEETING was held at Worcester, on Wednesday, the 1st, and Thursday, the 2nd of August, 1849. The following gentlemen were present.

ALCESTER.—George Wyman, Esq.
ALVECHURCH.—John Smith Gaunt, Esq.
BATH.—J. S. Bartrum, Esq.; W. J. Church, Esq.; Edmund Hodges, M.D.; John Kelvert, Esq.; R. W. Lindoe, M.D.; R. Marriott, Esq.; George Norman, Esq.; M. J. Taylor, Esq.; James Tunstall, M.D.
BAYTON.—W. Welton, Esq.
BELBROUGHTON.—J. L. Hobbes, Esq.
BENGEWORTH.—T. B. Cooper, M.D.; T. H. Porter, Esq.
BIRMINGHAM.—Samuel Berry, Esq.; Bell Fletcher, Esq.; James Johnstone, M.D.; Professor Knowles; Joseph Wickenden, Esq.
BLANDFORD.—E. Oke Spooner, Esq.
BOLTON.—James Black, M.D.
BRISLINGTON.—Charles Joseph Fox, Esq.
BROCKTON.—Joseph Hickman, Esq.
BROMYARD.—E. W. Harvey, Esq.
CARLISLE.—Thomas Barnes, M.D.
CHELTENHAM.—J. Abercrombie, M.D.; J. Allardyce, M.D.; W. Conolly, M.D.; W. Dalton, Esq.; Thomas Smith, M.D.
CHESTER.—James Edwards, M.D.
CHILCOMPTON.—Farnham Flower, Esq.
CHIPPENHAM.—Charles Bailey, Esq.; W. H. Colborne, Esq.
CLIFTON.—W. Mortimer, Esq.
DERBY.—James Heygate, M.D.
DROITWICH.—John Pemberton, Esq.
EVESHAM.—J. B. Haynes, Esq.; Anthony Martin, Esq.; Oswald New, Esq.
EXETER.—R. L. Pennell, M.D.
FARNHAM.—W. Newnham, Esq.
GUILDFORD.—J. Stedman, Esq.
HANWELL.—J. Conolly, M.D.
HEREFORD.—Henry G. Bull, M.D.; Charles Lingen, M.D.
HILL COURT.—W. H. Ricketts, Esq.
HILLINGDON.—Arthur Stilwell, M.D.
HOLMES CHAPEL.—C. Radclyffe Hall, M.D.
KEMPSEY.—W. Todd White, Esq.
KIDDERMINSTER.—G. W. Jotham, Esq.; Thomas Thursfield, Esq.
LEEDS.—R. G. Mayne, Esq.
LEICESTER.—Thomas Macauley, Esq.; Thomas Paget, Esq.
LONDON.—George Burrows, M.D.; J. Churchill, Esq.; John Rose Cormack, M.D. (Putney); John Forbes, M.D.; S. Hare, Esq.; W. Harvey, Esq.; Thomas Hunt, Esq.; J. D. Jeffery, Esq. (Southwark); W. J. Little, M.D.; C. J. Lord, Esq. (Hampstead); James Paget, Esq.; Francis Sibson, M.D.; John Snow, M.D.; Joseph Toynbee, Esq.
MALVERN.—Sherwin Coates, Esq.; W. C. West, Esq.
MANCHESTER.—Charles W. Bell, M.D.; Samuel Crompton, Esq.; John Hatton, Esq.; Edmund Lyon, M.D.; Thomas Radford, M.D.
MARKET HARBOROUGH.—F. Wright, M.D.
MELTON, SUFFOLK.—John Kirkman, M.D.
MUNSLOW.—Charles Pothecary, Esq.
NEWPORT.—E. Haward, M.D.
NORTHAMPTON.—A. Robertson, M.D.
OLDHAM.—Thomas Fawsitt, Esq.
OMBERSLEY.—Samuel Barnett, Esq.
OSWESTRY.—Peploe Cartwright, Esq.
OXFORD.—W. A. Greenhill, M.D.
PERSHORE.—John Claridge, Esq.; Francis Davies, Esq.; Graham Niven, Esq.
PLYMOUTH.—J. H. Fuge, Esq.
READING.—Charles Cowan, M.D.; R. Woodhouse, M.D.; Thomas Workman, Esq.
REDDITCH.—Christoph. Royston, Esq.
REIGATE.—Thomas Martin, Esq.
ROYAL NAVY.—T. Spencer Wells, Esq.
RUGBY.—James Paxton, M.D.
SEVERN STOKE.—Joseph Jones, Esq.
SOUTHAM.—H. L. Smith, Esq.
SOUTHWOLD.—Robert Wake, M.D.
STAFFORD.—H. T. Lomax, Esq.
STOCKPORT.—Richard Flint, Esq.
STRATFORD-ON-AVON.—D. Rice, Esq.

STUDLEY.—Henry Morris, Esq.
SUNBURY.—John S. Soden, Esq.
TAUNTON.—E. H. Woodforde, M.D.
THIRSK.—W. Lambert, Esq.
TINISBURY.—John Crang, Esq.
TORQUAY.—J. J. Field, M.D.
WIRKSWORTH.—W. Cantrell, Esq.
WOLVERHAMPTON.—G. Edwards, Esq.; J. Gates, Esq.; John Topham, M.D.
WORCESTER.—H. W. Budd, Esq.; H. D. Carden, Esq.; W. Cooksey, Esq.; J. Coker Davies, Esq.; David Everitt, Esq.; Richard Griffithes, Esq.; Charles Hastings, M.D.; Hilary Hill, Esq.; Richard Hill, Esq.; Walter James, Esq.; F. C. P. Malden, Esq.; J. Malden, M.D.; Josh. Mecars, Esq.; James Nash, M.D.; D. C. Noel, Esq.; M. Pierpoint, Esq.; James Robertson, Esq.; Jas. P. Sheppard, Esq.; T. S. Tearne, Esq.; J. H. Walsh, Esq.; T. W. Walsh, Esq.; P. H. Williams, M.D.

From the prevailing sickness and cholera panic, the attendance of members was much less numerous than it would otherwise have been; nevertheless, from the above list,—not complete, we fear,—the meeting may be correctly stated as large and very influential.

FIRST GENERAL MEETING

was held at the Natural History Rooms, Foregate-street, at one o'clock.

DR. HASTINGS, on taking the Chair, was greeted with great applause, which lasted for several minutes. He delivered the following ADDRESS:

FRIENDS AND FELLOW MEMBERS,—The elevated position in which your kindness has placed me, is calculated to awaken considerable apprehensions as to my capability of fulfilling its responsibilities. I have so high an opinion of the great trust you have reposed in me, and, by long experience, so just a diffidence in my abilities to fill it in a manner adequate even to my own ideas, that I should never have intruded into so high a situation, if I had not felt sure that I was acting in accordance with your wishes, and that I should be supported in my office by the same kindness and consideration that have ever marked the bearing of the members of this Association to their President.

It is now seventeen years since, in this very city, it fell to my lot to propose a plan upon which an Association might be formed, having for its object the advancement of medical science, and the elevation of the character of the cultivators of the art of medicine resident in the provinces. The glowing anticipations I then entertained have been fully realized by the results of the last seventeen years; or rather, the success which has attended our endeavours to combine and consolidate the energies of the provincial profession, has surpassed the expectations then formed of the probable progress of the Association. Instead of being, as then, a comparatively small body, you have increased nearly twentyfold; and there are now enrolled, as members of the Society, a considerable proportion of the whole medical profession of this country. Among the many advantages arising from the organization of the Society, the scientific and social benefits resulting from these happy annual meetings are so present to my mind, that I cannot avoid reverting to them now, when, after a series of years, you revisit the birth-place of the Association; for all these tend to heighten the delight which I experience in cordially welcoming you to this ancient and interesting city, where you will be received with all the honour which my medical brethren at Worcester so well know how to bestow.[1]

If we seek for further testimony to the beneficial results of the Association, we may find it in the investigations in which the members of the Society have been engaged, and of which our published TRANSACTIONS and JOURNAL are a fair monument; for our publications contain proof that all subjects originally proposed for investigation have received some attention, and that

[1] The hospitality and cordial welcome of the resident medical brethren, to members from other places, will not soon be forgotten by those who attended the late meeting in the ancient city of Worcester.

a harvest more or less abundant has been reaped. There is one department of inquiry originally proposed, in which we appear to have been less successful than in some others, the collection of Reports from Provincial Hospitals; but I am glad to observe that, within the year that has passed, the JOURNAL has been enriched by several valuable communications of this kind.

I must also note as deficient, the inquiries into the MEDICAL TOPOGRAPHY OF ENGLAND. There are, no doubt, to be found in our Transactions many valuable essays on this subject, but there are localities, where members of the Association are resident, concerning which many interesting particulars, as to soil and climate, manners and customs of the inhabitants, state of public health, and other particulars, might be collected. On these points especially, provincial practitioners have the means of gathering contributions, and thus of supplying a more perfect system of vital statistics than we at present possess.

The question of MEDICAL LEGISLATION has assumed an importance, since this Association was called into existence, previously unknown, and we have been engaged in laying deeply and broadly the foundations on which it must ultimately rest.

In my Address at the formation of this Society, I observed: "It is admitted on all hands, that the organization of the profession is not what it ought to be, for the whole system of medical polity in this country is both defective and erroneous. Opinions differ widely as to the evils and remedies; but few are found to commend the existing order of things. This subject is closely connected with the advancement of medical science; for if the profession were constituted as it ought to be, and as reason and sound principle dictate, the harmony that would be thus established among the several departments, could not fail to prove a direct means of their co-operating more cordially and efficiently in extending the science, and improving the practice."

At that time, it was my good fortune to enjoy the friendship of one who had thought deeply on medical ethics, and to whom the history of the alterations which had been slowly going on in medical polity were familiar, and who was also keenly alive to the incongruities that had arisen from the defective organization of the profession. Fortunately for the onward progress of this Association, that eminent individual actively co-operated in modelling the yet unformed constitution of this Society, and more especially in assisting our early deliberations on the course to be taken on the growingly-important question of medical reform. Need I utter the name of Barlow? Is it not present to you all?—a name never to be mentioned in this assembly but with the greatest respect. Feelings of sorrow are at this moment mingled with our joy, when we reflect that he and others are departed, and their voices will be no more heard among us! And here we must especially deplore the very severe loss the Association has this year sustained, in the sudden and unexpected death of our late inestimable Secretary, and my much valued friend; but the occurrence is too recent, and the circumstances too afflicting, to permit me to dwell upon them,—

"Pallida mors æquo pulsat pede pauperum tabernas,
Regumque turres."

I was just saying that Dr. Barlow had given profound attention to the question of medical legislation; and under his guidance chiefly, certain fundamental conclusions were arrived at, after much pains and labour, which we conceive must be the basis of any enlarged measure of medical legislation. They are enunciated in three short propositions.

I. Uniformity of primary qualification.

II. Equal right to practise throughout Her Majesty's dominions.

III. The adoption of the representative system in the formation of the councils or governing bodies.

These are the principles for which we are now contending, and with every prospect of ultimate success. Circumstances have arisen to delay the final settlement; but the good day must come.

There is, perhaps, no point of view in which the defects of our medical polity are more apparent, than in considering the medical attendance on the sick poor. The law provides, that during sickness the poor shall have medical attendance; yet the authorities constituted to carry out that benevolent intention have, in many instances, by their hard dealings with the medical attendants under the Poor-Law, gone far to deprive the sick-poor of the necessary succour; and, but for the generous devotion of the profession to their arduous duties, irrespective of pecuniary considerations, this must have been the case. Happily, the intervention of this Association, and other influential bodies, has in a degree mitigated these crying evils, and we see the dawn of better things.

It is evident, therefore, that in the absence of a more perfect state of organization of the medical profession, it is highly important that the members of this Society should consider it their bounden duty to devote their best energies to the advancement of the divine art which they cultivate; and we must remember, that one of the special objects of our meeting is to maintain the honour and respectability of the profession in the provinces, by promoting friendly intercourse and free communication of its members; and to establish among them the harmony and good feeling which ought ever to characterize a liberal profession. For all the evils which now oppress medicine, the influence of this Association must be potent, if we do but sedulously carry out those principles of medical ethics, which exist in every well-governed mind, and are identical in all circumstances, however variously they may be applied.

In Worcester, the medical Institutions are the Worcester General Infirmary, the Worcester Dispensary, and the Worcester Ophthalmic Institution. [Here Dr. Hastings gave an interesting account of these Institutions, and of the Worcestershire Natural History Society.]

In conclusion, let me give expression to the great joy with which I hail this day—*O diem lætum notandumque mihi candidissimo calculo!*—the day that this Association revisits Worcester, once the capital of an ancient kingdom, but more closely linked to us as the centre of our flourishing Society. Let me also assure you, that in anything which concerns the cause of science, and the interests of humanity, you may command my humble services, and that I highly value this Association, for I there witness the triumph of the social principle, and the subjection of all low, paltry, and selfish interests to the interests of man. I earnestly recommend you all to cherish this social principle; it is the principle which promotes peace; it is the principle of true honour; it is the principle of the Christian religion. [Dr. Hastings resumed his seat, amid loud and long-continued cheering.]

Report of the Council, read by J. P. Sheppard, Esq. [Our limits only enable us to give extracts from this document.]

Secretary and Editor. The death of Dr. Streeten has created a vacancy in the office of Secretary, and also in that of Editor. The Council recommend that in future these offices be not held both by the same person. They advise that Mr. Sheppard, who has kindly undertaken the duties, *pro tempore*, and who also was formerly Honorary Secretary, be appointed the Secretary. As several applications have been made by members for the Editorship of the *Journal*, the Council believe that the best mode will be to refer these applications to a Committee, empowered to appoint an Editor.

Financial Statement. The Secretary then read the Treasurer's Statement of Accounts. The Receipts for the past year amounted to £1718. 0*s.* 4*d.*; the Expenditure to £1701. 17*s.* 10*d.*; leaving a Balance in the Treasurer's hands, of £16. 2*s.* 6*d.*

Dr. Burrows, of London, moved the adoption and printing of the Report, which was seconded by Dr. Little, of London, and unanimously agreed to.

Appointment of Secretary. Dr. J. Conolly moved that J. P. Sheppard, Esq. F.R.C.S., be elected Secretary to the Association. Dr. Forbes seconded the resolution, which was carried unanimously. J. P. Sheppard, Esq., in

returning thanks for the honour they had so unanimously and kindly conferred upon him, called the attention of the Association to that part of the Report of the Council bearing reference to the payment of the subscriptions, and remarked that, at the present time, there were arrears of subscriptions (only reckoning those who were in arrear more than three years) of £1,823!! It was absolutely necessary to proceed on more stringent principles with reference to the payment of the subscriptions. With the support and cooperation of the Society he would unflinchingly do his duty with reference to the arrears.

J. Soden, Esq., of Bath, moved, "That the thanks of this meeting be given to G. Norman, Esq., F.R.C.S., the retiring President, and that he be appointed a Vice-President of the Association." Dr. Robertson seconded the motion, which was carried unanimously. Dr. Tunstall, of Bath, moved, "That the thanks of this meeting be given to the Council of last year, and that the following additional members be added: Dr. Williams, Worcester; Thomas Stephenson, Esq., Worcester; Richard Hill, Esq., Worcester; Dr. Butter, F.R.S., Plymouth; John M. Faircloth, Esq., Northampton." Mr. Lambert, of Thirsk, seconded the resolution, which was carried unanimously.

The Editorship. Dr. Conolly, of Cheltenham, moved the following resolution: "That the President and Vice-Presidents of this Association be appointed a Committee, to make such investigations as they may think necessary, into the qualifications of those gentlemen who may be willing to undertake the office of editor of the *Journal*; and that they may be empowered to fill up the office, and to report their appointment to the Council within three months,—such appointment being subject to confirmation or rejection at the Anniversary Meeting in 1850." Mr. Bartrum, of Bath, moved, as an amendment, that the following gentlemen form an addition to the Committee: Dr. Forbes, Dr. Budd, Dr. Greenhill, Dr. Cowan, and Dr. Bell. Mr. Crompton thought the present an admirable opportunity for the Committee to take into consideration the general management of the *Journal*, and its cost of production; for he had good reason for supposing the cost of the production of the *Journal* at Worcester, was greater than if it were done by one of the first London houses, and in the first London style; and he had the opinion of a most competent judge, to whom the *Journal* had been submitted, whose remark was,—that the *Journal* was badly printed on bad paper, with bad ink, badly edited, and, he might say, badly folded. Under these circumstances, he moved, as an addition to the amendment, "That the Committee should make such an inquiry into the business of the *Journal*,—more especially with reference to the cost of its production,—and also, as to whether it was desirable that it should be continued to be printed at Worcester." The President observed, that the proper course would be, to put the amendment first, then the resolution, and then to put Mr. Crompton's suggestion as a substantive motion, after the other business on the paper had been disposed of. Mr. Norman wished to know whether the Committee to be appointed for the selection of an editor, would have power to select, as editor, any member of the Association; or whether it be necessary that he be a resident of Worcester. The President. With respect to the publication of the *Journal*, it is at present one of our rules that it be published in Worcester; but the Committee would deliberate upon the selection of an editor, without regarding particular localities.

The amendment having been put from the Chair, was lost by a large majority; the original motion for the appointment of a Committee, consisting of the President and Vice-Presidents only, was then carried.

Proposed Essay on the Epidemic Visitation of Cholera. Mr. Flint, of Stockport, then moved the following resolution:—"That the Council be requested to take into their consideration, whether it will not be desirable, as soon as the present epidemic visitation of Cholera has passed away, to issue a series of questions to the members, similar to those issued after the close of the epidemic catarrh, in 1837, requesting information respecting the origin, progress, and duration, of the epidemic; its symptoms and treatment; the

atmospheric phenomena preceding and attending it; together with such other particulars as may be necessary for the elucidation of many questions of interest connected with its appearance." Dr. Cowan, of Reading, seconded the resolution, which was carried.

The Journal. Mr. Crompton, of Manchester, then brought forward his resolution, about the getting up of the *Journal*. Dr. Cormack, of Putney, thought well of the *Journal:* but still, if it were clearly stated that Mr. Crompton's motion implied no censure on the former or present management, he would be inclined to vote for it. Dr. Greenhill, of Oxford, seconded the resolution. Dr. Robertson, of Northampton, bore testimony to the value of the *Journal*. There was one most noble feature in it, that it had never disgraced itself by asperities, but had endeavoured to cultivate good feeling among all classes of the profession. It had been conducted for many years, during the whole of which the editors might say, "We have never hurt the feelings of one worthy man." (Cheers.) Mr. Crompton explained, that he cast no imputation on the late editor, nor on the Council. Dr. Heygate, of Derby, took the same view as that taken by Dr. Robertson; and the President, in putting the resolution, said, that the Council had been considering attentively how they could lessen the expenditure upon the *Journal*. Two years ago the whole matter had come before a Committee of Inquiry, and considerable alterations had been effected. Mr. Churchill, who was a very extensive publisher in London, and a man of great knowledge on the subject, had told him (Dr. Hastings) only the other day, that so far from thinking there was any extravagance or bad management, he was only surprized that the Association could give so much matter as they did to their members, for so small a subscription. The resolution moved by Mr. Crompton was negatived by a large majority.

Mr. Edwards's Case. The President then said, that he had to bring before them a matter of great delicacy, respecting Mr. Edwards, of Wiveliscombe. Some time since, a Mr. Blake had, by means of false certificates, obtained a diploma from the College of Surgeons, and commenced practising. The Somerset and Taunton Branch of this Association took the matter up, and brought it before the College of Surgeons, who were so satisfied that the matter was as stated by the Branch, that they removed the name of Mr. Blake from their list, and he was consequently deprived of his diploma. He still, however, continued to practise in Taunton; but the profession at Taunton considering that he was an unqualified person, after being deprived of his diploma, refused to associate with him, or meet him in consultation. Mr. Edwards, on the contrary, although living eleven miles from Taunton, had frequently gone to that town, after the declaration of the professional gentlemen, and entered into consultation with Mr. Blake. In addition to being a member of the Association, Mr. Edwards was the President-elect for the Taunton Branch for the ensuing year; and the Branch brought the matter before the Worcester Council in May last, and had put three questions to them:—First, as to whether Mr. Blake was a qualified practitioner; and if not, whether Mr. Edwards was justified in meeting Mr. Blake in consultation; to both of which questions they had answered in the negative; and, thirdly, they had asked what, under the circumstances, the Worcester Council would advise them to do with regard to Mr. Edwards being the President-elect. The advice they had given them was, that they should request Mr. Edwards to resign the Presidency, which was accordingly done, and Mr. Edwards resigned. Mr. Edwards's name still remained on the books of the Association; it could not, however, remain longer under the circumstances, and it therefore became necessary to carry into operation the 22nd rule, which was framed for the purpose of meeting such cases. Dr. Woodforde proposed, and Dr. Heygate seconded, the following resolution, which was carried unanimously:—"That at the request of the West Somerset Branch of the Association, it is proposed that the name of A. F. Edwards, of Wiveliscombe, be removed from the list of members of the Association, on account of

unprofessional conduct in habitually consulting with an unqualified person." Mr. Soden proposed, and Mr. Flint seconded, the following resolution, which was also carried unanimously:—"That this meeting express its high admiration of the West Somerset Branch, in acting with so much decision and energy in upholding the dignity and honour of the profession, by bringing before the Association the unprofessional conduct of Mr. Edwards, and that the thanks of the meeting be given to the West Somerset Branch, and also to the Central Council, for their judicious advice on this unpleasant occasion."

Medical Ethics. Dr. Conolly, of Hanwell, then moved the following resolution, which was seconded by Mr. Crang, and carried unanimously; "That a Committee of five members be appointed, to consider the means advisable to be adopted with a view to bringing the subject of Medical Ethics before the medical profession." Dr. Greenhill, Dr. Robertson, Dr. J. Conolly, Dr. Mackness, and Mr. Flint, were named as the Committee. Dr. Conolly proposed, and Mr. Bartrum seconded, "That the Committee appointed by the Council to consider the best mode of bringing the subject of Medical Ethics before the Association, be requested to draw up a short code of Medical Ethics, which shall be forwarded to the Council of the Association previous to the Annual Meeting in 1850."

Papers and cases were then read, which we propose to notice, in a future number, under their respective departments.

Second General Meeting.

The members met at eight o'clock, in the Natural History Society's Rooms, when the chair was again taken by Dr. Hastings.

Benevolent Fund. Mr. Newnham, of Farnham, read the Report of the Benevolent Fund:—

Financial Statement for the Year ending June 30, 1849.

Donation Fund.	£.	s.	d.	Subscription Fund.	£.	s.	d.
Balance of last year -	103	15	3	Balance July 1st, 1848 -	102	12	8
Interest for the year -	59	10	0	Subscriptions to June 30,			
Donations in the year -	203	12	9	1849, inclusive - -	416	15	2
	366	18	0		519	7	10
Per Contra -	186	14	6	Per Contra -	490	2	11
Balance -	180	3	6		209	8	5

Balance in hands of Treasurer, July 1st, 1849.

	£.	s.	d.
Donation Fund - - - - - - - - -	180	3	6
Subscription Fund - - - - - - - -	29	4	11
Total - - - - - - - -	209	8	5

Dr. Cowan, of Reading, then moved, "That the Report now read be received and adopted; and that the thanks of the Association be given to Mr. Newnham, of Farnham, for his unwearied exertions in promoting the interests, and increasing the amount of the Benevolent Fund, and that he be requested to continue his valuable services as Secretary." The resolution was carried by acclamation.

Physiological Address. Dr. Sibson, of Nottingham, then delivered the "Address of Physiology", which elicited the greatest admiration.

Third General Meeting.

Monument to Jenner. Dr. Robertson, of Northampton, moved the following resolution: "That a Committee, consisting of the following gentlemen, viz., the President of the Association, Dr. Baron, F.R.S., Mr. Ceely, Dr. John Conolly, and Dr. Forbes, be appointed to correspond and cooperate with the Committee formed, or about to be formed, in London, with reference to the erection of a public monument to the illustrious Jenner." Dr. Heygate, of Derby, seconded the motion, which was carried unanimously.

ADDRESS IN MEDICINE. Dr. Bell, of Manchester, then proceeded to deliver the Address of Medicine, of which, and Dr. Sibson's address, we will take notice, when they appear in due course in the transactions of the Association. A full account of the whole proceedings, including the public breakfast and dinner, will be found in the Provincial Journal.

Every thing gave every body satisfaction; the general feeling seemed to be that the Association, in spite of its "Provincial" name [after all a misnomer], was in reality the most influential, as well as the most numerous Medical Institute in the United Kingdom. Long may it flourish in its native and inherent strength, and may it take warning from other Medical Bodies, and never be tempted to come under the wasting and deadening trammels of a Royal charter. It is to the free and unfettered Provincial Medical Association, that we must mainly look for guidance and protection in the present times of difficulty and danger to the profession.

MISCELLANEOUS INTELLIGENCE.

RENUNCIATION OF HOMŒOPATHY IN THE TREATMENT OF CHOLERA, by Dr. F. F. Quin, President of the British Homœopathic Society. The present emergency has called forth the following complete, though unobtrusive recantation of infinitesimal trifling with Cholera. Dr. Quin recommends camphor in heroic doses. He trembles to trust to the inert attenuations—the ostensible materia medica—of his system. He is too sly to state explicitly that homœopathy is a delusion, and that people treated by homœopathic remedies, in homœopathic doses, are not treated at all. Being, however, somewhat reluctant to assist in enlarging the catalogue of homœopathic catastrophes, he makes a compromise with his conscience, and recommends what, we have no hesitation in saying, is one of the very best, and, we believe, the most common method, among regular physicians, of treating choleraic spasm. That there may be no misunderstanding, or alleged misrepresentation, we quote the passages which contain his views on this remedy.

"If the above symptoms" (premonitory diarrhœa, etc.) "are accompanied or succeeded by cramps in the bowels or in the limbs, with or without rigors, sensation of cold, rigidity of the muscles, and vomiting, which is a constant but not an invariable symptom, then the concentrated spirit of *camphor* should at once be given. My preparation of this remedy is *one* drachm of camphor to *six* drachms of alcohol. Two drops every four or five minutes on a small piece of sugar, till profuse perspiration sets in, and the cramps, vomiting, and diarrhœa diminish; as the symptoms diminish in intensity, the intervals between the doses to be lengthened to every ten, fifteen, and thirty minutes, to every hour, two hours, and so on, till at last the remedy be only given twice or even once a day." Again, in another part of his paper, Dr. Quin recommends families and medical men to keep at hand several homœopathic remedies (which he mentions), "and especially the spirit of camphor, which is the easiest of administration, and the most efficacious in the onset of the disease. It even may be of great service in the case of those who would not submit to comply with other parts of the homœopathic treatment. In fact, camphor is a remedy which allopathic practitioners may use with the greatest advantage. He will in many cases find no other remedy required. If a homœopathic practitioner be called in to a case that has been so far treated allopathically, he should begin with four or five drops of *camphor*, to be given every four or five minutes, at least several times, to re-animate the system depressed by disease, and to neutralize the action of the medicines previously taken; and then proceed to *veratrum*, *capsicum*, etc., according to the indications. The same instruction applies to the allopathic practitioner, who, from a sense of the failure of his own usual resources, may be willing to make trial of the homœopathic remedies." (*The Homœopathic Times*, No. I, August 4, 1849.) There is no end to the great discoveries of the homœopaths. Camphor in large doses (we must henceforth remember) "neutralizes the action of medicines previously taken": it is therefore, we presume, to be used as a universal antidote in poisoning.

APPOINTMENTS.

ANDREWS, Thos., M.D., F.R.S., appointed Professor of Chemistry in Queen's College, Belfast
BLYTH, J., M.D., appointed Professor of Chemisty in Queen's College, Cork.
BROWN, James V., M.D., B.A., appointed Professor of Surgery in Queen's College, Galway.
BULLEN, Denis B., appointed Professor of Surgery in Queen's College, Cork.
BURDEN, William, M.D., appointed Professor of Midwifery in Queen's College, Belfast.
CANTON, Edwin, Esq., elected Surgeon to the Royal Infirmary for Diseases of Children, in the room of FRANCIS HIRD, Esq., resigned.
CARTE, Alex., M.D., appointed Professor of Anatomy and Physiology in Queen's Coll., Belfast.
CARPENTER, William B., M.D. Edin., etc., appointed Professor of Medical Jurisprudence in University College, London, in the room of Dr. A. T. THOMSON, deceased.
CARLILE, Hugh, M.D., appointed Prof. of Anatomy and Physiology in Queen's Coll., Cork.
COLAHAN, N., M.D., appointed Professor of Medicine in Queen's College, Galway.
DICKIE, Geo., M.D., appointed Professor of Natural History in Queen's College, Belfast.
FERGUSON, John C., M.D., elected Prof. of the Practice of Medicine in Queen's Coll., Belfast.
FLEMING, Alex., M D. Edin., appointed Professor of Materia Medica in Queen's Coll., Cork.
FLOURENS, M., appointed Director of the Académie Française at Paris, for six months.
GORDON, Alexander, M.D., appointed Professor of Surgery in Queen's College, Belfast.
GUERIN, Dr., appointed, by concours, Prosector in the Amphitheatre of Anatomy, Paris.
HARVEY, J. A., M.D., appointed Professor of Midwifery in Queen's College, Cork.
HINKS, William, LL.D., appointed Professor of Natural History in Queen's College, Cork.
JENNER, William, M.D. Lond., appointed Professor of Pathological Anatomy in University College, in room of Dr. WALSHE, who has succeeded Dr. WILLIAMS.
KING, Croker, M.D., appointed Professor of Anatomy and Physiology in Queen's Coll., Galway.
M'CAY, Simon, M.D., appointed Professor of Materia Medica in Queen's College, Galway.
MELVILLE, A. G., M.D., appointed Professor of Natural History in Queen's College, Galway.
MERRIMAN, S. W. J., M.D., elected, on the 24th August, one of the Physicians to the Royal Infirmary for Children.
O'CONNOR, D. C., M.D., appointed Prof. of the Practice of Medicine in Queen's Coll., Cork.
O'MEARA, Thomas, M.D., appointed Professor of Materia Medica in Queen's College, Belfast.
RONALDS, E., M.D., appointed Professor of Chemistry in Queen's College, Galway.

OBITUARY.

ANDREWS, John G., Esq., F.R.C.S.Eng., Surgeon to the London Hospital, at his residence, St. Helen's Place, Bishopsgate Street, in the 68th year of his age, on 28th July. Mr. Andrews was a Member of the Council and Court of Examiners of the Royal College of Surgeons of England, and had been elected President in 1835 and 1843.

BARTHOLDI, M. C., Professor of Natural Philosophy, Chemistry, and Natural History, in the Central School of Colmar, at Munster, in his 87th year.

BERRILL, Wm., M.D., Surgeon to the Forces, H.P., at Portsmouth, aged 56, on 18th July.

BRUCE, Walter, M.D., at 22, Charlotte Street, Leith, on 18th August.

BURTON, Henry, M.D., Senior Physician of St. Thomas's Hospital, at his residence, 41, Jermyn Street, after a few hours' illness, on the 10th August.

DUCKLE, Hen. Chas., M.D., of Pilham hall, Gainsboro', at Caen, Normandy, aged 46, on Aug. 2.

FINLAY, John, M.D., at Paisley, on 2nd August.

GILHAM, Dr., at Madeira, in the 34th year of his age, on 9th July.

HENDERSON, Wm., Assist.-Surg. R.N., at Hong Kong, on board H.M.S. Aligator, on April 11.

HOLE, Richard Brassey, M.D., at Salisbury, on 23rd July.

JUDSON, J. H., Esq., Surgeon, late of Ware, Herts, at Henley-on-Thames, aged 77, on 11th Aug.

KEALLEY, Benj., Esq., Surgeon, of Lit. Newport St., Leicester Sq., at Stockwell, aged 36, July 27.

KEY, Charles Aston, Esq., Senior Surgeon to Guy's Hospital, and Surgeon in Ordinary to H.R.H. Prince Albert, of Cholera, after a few hours' illness, at his residence, St. Helen's Place, Bishopsgate Street, on 23rd August. Mr. Key was one of the most eminent operative and consulting surgeons in London. He was well known, and in much repute throughout Europe.

MILBURN, Henry, Esq., Surgeon, at Stockton, on 11th July.

MUNRO, Mr. William, formerly of Dingwall, N.B., at Stratford, Essex, on 9th August.

REID, John, M.D. Edin., Professor of Physiology and Medicine in the Unniversity of St. Andrew's, aged 40, on 30th July. In a future number we propose to devote some pages to the life and writings of this eminent philosopher. His latter sufferings were terrible: but while he prayed earnestly for release from this world, he repined not, and thanked God for his affliction and the blessed influence it had had upon him. We refer our readers to a very true, though cursory estimate of his career, in the *Medical Times*.

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ORIGINAL COMMUNICATIONS.

ON PERICARDITIS.

By FRANCIS SIBSON, M.D., F.R.S.

THE following paper is designed to render our knowledge of Pericarditis more exact, and to bring forward some points in reference to that disease, not dwelt upon by other observers.

Position of the Heart in Health. In order to appreciate the exact changes which take place in the Position of the Heart, and in the superficial outlines of the pericardial sac, in Pericarditis, it is necessary to know the precise position of the heart in health. This knowledge may be readily attained by the aid of the accompanying diagrams.[1]

The heart and pericardium, in health, are in immediate contact with the walls of the chest, over a space limited to the right by a line drawn through the centre of the lower half of the sternum; to the left by a line within the nipple; above, by the fourth left costal cartilage; and below, by a line drawn outwards from the lower end of the sternum. Over the superficial cardiac region, just indicated, there is absolute dulness on percussion, and complete absence of vocal resonance, and of the respiratory murmur; the heart's sounds are there loud, ringing, and clear, and the heart's impulse is to be felt there, if anywhere. The perpendicular diameter of this region is usually from two to two and a half inches, and its horizontal diameter from two and a half to three inches. In the robust, the lungs are ample, and cover a large portion of the heart; consequently the region in question is comparatively small, the heart's impulse is generally feeble, often imperceptible, and the heart's sounds are dull and heard only over a comparatively small space. In the weak,

[1] These diagrams were made by the aid of a tracing frame, suggested to me by my friend Dr. Hodgkin. This frame is described in my paper on the Position of the Internal Organs, contained in vol. xii of the *Provincial Medical Transactions*. I may be allowed to say, that these diagrams, and the communication just quoted, owe their value to the exactness with which the observations were made and depicted, both in life and death, in health and disease, by the aid of the tracing frame referred to.

on the other hand, the lungs, being small, cover only a small portion of the heart; the region in question is consequently large, the heart's impulse is extensive and strong, and the heart's sounds are clear, sharp, and loud, and are usually heard over the whole chest, being readily conducted to the surface through the smaller and denser lungs. It is manifest from this, that the apparent strength of the heart's action is often in the inverse ratio of its real strength. If the cardiac region, where there is nothing but heart, be small, it is no indication that the whole heart is small. Indeed, in the robust, the heart, as well as the lungs, are larger than they are in the weak; but the lungs are so much larger in the former, that they cover a much larger portion of the heart. This point is illustrated, in a very interesting manner, in persons affected with Laennec's emphysema or bronchitis. In such cases, not only are the lungs unusually and universally enlarged, but the heart is unusually enlarged also; yet, notwithstanding its greatly increased size, a small portion of the heart only is uncovered by lung.

I shall throughout this paper, in referring to the region of which I am now speaking, where there is nothing else but heart, term it the cardiac region. It is over the cardiac region that we discover the earliest signs of Pericarditis; and, when we examine a patient to find out whether he has or has not that disease, it is of the utmost importance to bear in mind the exact seat, form, and size, of the cardiac region,

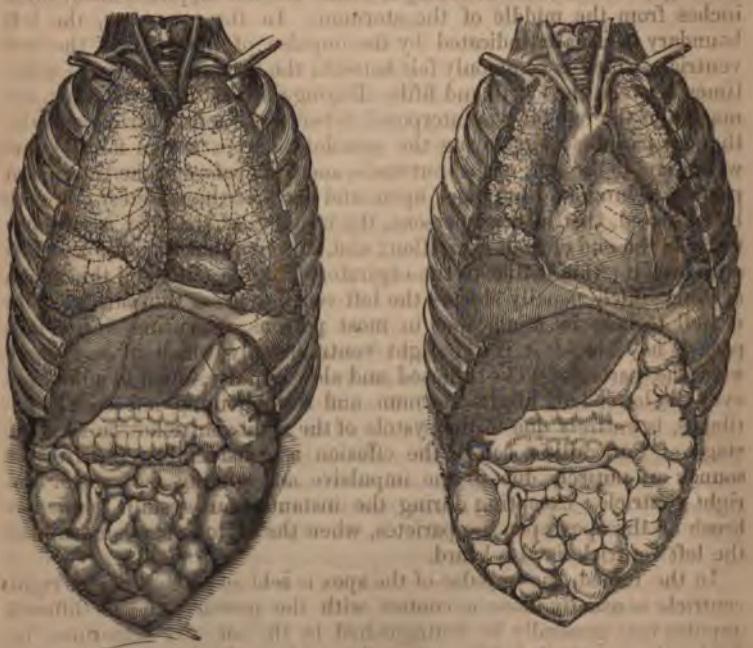

Fig. 1. Superficial view. Fig. 2. Deep view.

Position of the Internal Organs in a healthy adult male.

and the possible variations of that region in health, and in the different forms of visceral disease.

In health, the lower end of the sternum indicates the meeting point, where the heart, the right lung, and the liver, come in contact; the diaphragm, pleura, and pericardium, being alone interposed. I ascertained that this was so in more than 110 persons, in none of whom could I detect disease either in the lungs or the heart: these persons varied from each other in sex, age, and in general health; some of them being robust, and some feeble. In all of these persons, the right boundary of the cardiac region was immediately behind the centre of the lower half or third of the sternum, and the lower boundary was indicated by a nearly horizontal line, drawn from the lower end of the sternum to the upper edge of the sixth rib. The variation in the outlines of the cardiac region takes place in the upper and in the outer or left boundaries. In the robust, the upper boundary is usually behind the space between the fourth and fifth costal cartilages, and the left boundary is from two to nearly three inches from the centre of the sternum. In feeble persons, the upper boundary of the cardiac region is often as high as the third costal cartilage, and the outer boundary may extend to the left nipple.

In the majority of persons, especially of those dwelling in towns, the upper boundary of the cardiac region is on a line with the fourth costal cartilage, and its outer boundary is within the left nipple, or about three inches from the middle of the sternum. In these persons, the left boundary is usually indicated by the impulse of the apex of the left ventricle, which is commonly felt between the fifth and sixth ribs, sometimes between the fourth and fifth. During the diastole of the heart, the margin of the left lung is interposed between the left ventricle and the thoracic parietes; but during the systole, the apex moves forcibly forwards, and to the left, pushes outwards, and from before it, the interposed portion of lung, and impinges upon, and elevates the parietes. It may be observed, that in most persons, the impulse of the apex is stronger towards the end of each expiration; and, in some, that impulse can then only be felt; this is due to the expiratory diminution of the thin couch of lung which usually shields the left ventricle from the parietes. It is well to bear in mind, that in most persons, excepting during the periods now stated, it is the right ventricle only which is in contact with the parietes. The diffused and slow impulse which is often felt over the lower half of the sternum, and the adjoining left costal cartilages, is entirely due to the systole of the right ventricle. In the first stage of Pericarditis, before the effusion is considerable, the friction sounds are entirely due to the impulsive and gliding motions of the right ventricle; excepting during the instantaneous systolic blow and brush of the apex upon the parietes, when the systolic friction sound of the left ventricle is also heard.

In the robust, the impulse of the apex is seldom perceived; the right ventricle is usually alone in contact with the parietes, and its diffused impulse may generally be distinguished by the ear, and sometimes by the hand, over the left fifth and sixth costal cartilages. In the feeble, the lungs, being comparatively small, are withdrawn to some extent from between the heart and the parietes; and, in addition to the right

ventricle, a portion of the ear of the right auricle, and a part of the left ventricle, are immediately behind the walls of the chest. In such persons, the impulse both of the apex and of the right ventricle is unusually strong. In some persons, who are feeble, wasted, and confined to bed, whose lungs and heart are free from disease, and in whom respiration and circulation are feeble, a still larger portion of the heart is uncovered by the lungs; the great vessels come in contact with the upper part of the sternum, the right auricle is exposed by the withdrawal of the inner margin of the right lung to the right of the sternum, and the left ventricle is to a moderate extent in contact with the ribs and intercostal spaces. In such, the impulse, both of the left and right ventricle, is extensive, sharp, and strong; and, in addition to the systolic impulse, a second or diastolic impulse is felt between the second and third, and sometimes between the first and second costal cartilages. This second impulse is neither more nor less than a sign, that the upper part of the right ventricle, and the origin of the pulmonary artery, over which it is felt, are in contact with the walls of the chest. This diastolic impulse, which is synchronous with the second sound, is a physiological and not a pathological phenomenon, and is due, I believe, to the sudden return forward of the walls of the right ventricle, and of the origin of the pulmonary artery, immediately after the systole; the parts in question then impinge with a short, sharp tap on the left second and third cartilages, and on the space between them. I have been thus exact in tracing the varieties in the extent to which the surface of the heart is exposed behind the walls of the chest in different persons, as in each of them there would be a distinct starting point in a case of Pericarditis. Besides this, the friction sounds would, at the outset, be heard more extensively, and there would be less difference between the normal outline of the cardiac region, and the outline of the pericardium distended by effusion, in those cases where the surface of the heart is more extensively exposed.

When the lungs are large, and the exposed portion of the heart is small, the extent to which the heart is screened by the lungs from contact with the walls of the chest is considerable. If the lungs, on the other hand, be small, the extent to which the heart is exposed being considerable, a small portion only of the heart is covered by lung.

In examining a case of Pericarditis, it is well to know not only the position of those parts of the heart which are in immediate contact with the walls of the chest, but also the position, in relation to the parietes, of those parts also which are usually covered by lung. The medical man, when he places the stethoscope over the heart, ought to be able, in fact, to say over what particular portion he places it.

The position of the great vessels is easily remembered. The aorta, the central vessel, lies exactly behind that part of the sternum which is above the third cartilage; the pulmonary artery is situated just to the right of the same portion of the sternum, and the vena cava just to the left of it. The right ventricle lies immediately behind the lower half of the sternum, and the left costal cartilages from the third to the sixth; the right auricle, to the right of the ventricle, is behind the sternal half of the right costal cartilages from the third to the sixth, and its appendix lies across the sternum, narrowing from right to left, just

below the third costal cartilages; the small portion of left ventricle which is in front, is just to the outside of the right ventricle.

The auricular border of the right ventricle, commonly called its base, crosses the sternum in an oblique line, from the left side of it at the third costal cartilage, to the right side of it at the lower end. As the most early, severe, and frequent seat of Pericarditis is immediately along the course of this line of the right auriculo-ventricular junction, and over the right ventricle to the left of it, and the right auricle to the right of it, it is very important to have clearly in the mind the position of the parts in question.

Displacement of the Heart by Disease. Should the heart, when displaced by disease, be affected with Pericarditis, the friction sounds, and other indications of the disease will necessarily be present, not over the usual, but over the actual situation of the heart. In such cases, if we would ascertain the presence of Pericarditis, we must examine the heart at the seat of its displacement.

In emphysema, the lower boundary of the heart, as well as that of the lungs, is unusually low; and the heart, although enlarged, is covered to an unusual extent by the dilated lungs. The cardiac region, that is to say the exposed portion of the heart, is consequently remarkably small and low. The exposed portion of the heart, instead of being behind, and to the left of the lower half of the sternum, is completely screened by lung from the sternum, and is seated behind, below, and to the left of the xiphoid cartilage. I possess the notes of a case of emphysema, in which Pericarditis was detected by the presence of friction sounds behind the xiphoid cartilage, and the costal cartilages to the left of it.

In peritonitis with great abdominal distension, the diaphragm being pushed upwards, the cardiac region is unusually high; indeed its lower boundary, instead of being on a line with the lower end of the sternum, may be an inch higher. Should friction sounds from Pericarditis be present in such cases, their situation, even at the outset of the disease, will be unusually high.

When there is extensive effusion into the left pleura, the fluid pushes the heart over to the right of the sternum, the displacement being proportional to the amount of effusion. When the fluid disappears, the heart gradually resumes its normal position. If, after the disappearance of the effusion, the left lung fails to resume its functions, and remains condensed and unexpanding (owing, perhaps, to its being surrounded by a fibrous covering, and by strong intercostal adhesions), the heart, instead of remaining at its normal position, is drawn over unusually to the left, so that the impulse of the apex may be felt to the outside of the nipple. At the same time, the right lung, to compensate for the deficiency of the left, is enlarged, and encroaches to some extent on the left side.

Should the effusion be seated in the right pleura, the heart is pushed over unusually to the left. Should permanent condensation of the right lung be the sequel of the disappearance of the fluid, then the heart will be drawn over to the right. Indeed, in some such cases, the heart is seated behind, and to the right of the sternum; and the left lung, amplified for compensation, encroaches on the right side.

From whatever cause either lung is condensed, whether as the sequel

of phthisis with cavities, or of pneumonia, the heart is drawn over to the affected side; this side is also encroached upon by the opposite lung, which is itself usually enlarged, to compensate for the impaired function of the other.

Movements of the Heart. It occurred to me, that it would give additional precision to the knowledge of the friction sounds excited over different parts of the heart in Pericarditis, if we knew accurately the exact motion of each part of the heart during its systole and diastole. In order to ascertain this, I rendered an ass unconscious by injecting into its veins the wourali poison, with which I had been kindly favoured by my distinguished friend, Mr. Waterton. I then kept up artificial respiration, and exposed the heart by removing the ribs. In order to see the exact motion of each part of the heart, I thrust pins into it in different directions, and then observed the various movements. I have given a detailed account of that experiment in my paper "On the Position of the Internal Organs" (*Provincial Medical Transactions*, vol. xii); and I subjoin a summary of those observations.

The greater part of the anterior surface of the heart, both ventricular and auricular, has a diagonal gliding or friction movement, namely, during systole, from right to left, and from below upwards. The movement from right to left has, as it were, its pivot or hinge in the line of the superior and inferior venæ cavæ; and that from below upwards, has its hinge of movement in the pulmonary veins; the vertical axis, on which the horizontal movements turn, runs through the base of the right auricle; and the horizontal axis, on which the vertical movements turn, passes along the base of the left auricle.

During the systole, the right ventricle becomes narrower, flatter, and shorter. The lower border of the right ventricle and the outlet at the pulmonary artery, gradually approach each other during the systole; the walls everywhere move from below upwards, with a diagonal movement from right to left, until within about half an inch of the pulmonary artery; there the walls are stationary; between that point and the artery they move from above downwards. The pulmonary artery is itself dragged downwards about a quarter of an inch by the neighbouring descending fibres of the right ventricle. The right auricle, previously flaccid, becomes gradually distended during the ventricular systole; the whole auricle becomes wider, and its ventricular margin moves about half an inch from right to left; the auricular portion, before scarcely perceptible, becomes swollen, and advances boldly and rapidly forwards, and from right to left, for the extent of about two-thirds of an inch; and the tip of the right auricular portion, which, at the beginning of the systole, is behind the right margin of the sternum, moves over, during the systole, to its left margin.

The general systolic movements of that part of the left ventricle which lies to the outside of the right ventricle, are also from right to left, and from above downwards. There is, however, a singular diversity in the movements of the part in question; while the apex of the left ventricle moves forwards, upwards, and from right to left, a small portion of that ventricle contiguous to the apex moves from left to right, dragging with it the contiguous portion of the right ventricle, while the two auricular thirds of the ventricle go from right to left. The aorta, like

the pulmonary artery, descends about a third of an inch during the systole.

From this it is to be observed, that the whole of the anterior portion of the heart, and the great vessels, have a gliding or friction movement during both systole and diastole,—that, during the systole, the anterior walls of the heart move diagonally from below upwards, and from right to left, the horizontal movement of those portions of the right auricle and ventricle near their junction, and of the auricular appendage, being by much the most extensive,—and that the aorta and pulmonary artery descend during systole, and ascend during diastole. In short, the various cavities in part exchange places during the systole and diastole; during systole, the ventricles empty themselves, the auricles and the arteries become more full, and where they adjoin the ventricles, both the auricles and the arteries occupy a portion of space previously occupied by the ventricles; during the diastole, the ventricles regain their position, and the auricles and arteries go back to theirs.

For a further description of the interesting phenomena in question, I refer to my own experiment just quoted, and to the valuable report of the Committee of the British Association (composed of Dr. C. J. B. Williams, Dr. Todd, and Dr. Clendinning), on the Movements and Sounds of the Heart.

Artificial Distension of the Pericardium, compared with Morbid Pericardial Effusion. Pericardial effusion being one of the earliest results of Pericarditis, I felt anxious to study, on the dead body, the effect of pericardial distension on the situation and size of the pericardium and of the heart, and on the position of the surrounding organs.

With this view, I imitated pericardial effusion, by injecting into the healthy sac as much fluid as it would hold.

M. Piorry thus describes the difficulties which he experienced when he attempted artificial distension of the pericardium: "Quelques essais tentés sur le cadavre, dans l'intention de simuler des maladies de l'enveloppe membraneuse du cœur, n'ont pas réussi. Des gaz pénétraient par les incisions que nous faisions aux parois costales; les injections se faisaient mal; elles pénétraient quelquefois dans les plèvres; on ne pouvait, après les avoir faites, boucher exactement l'ouverture artificielle qu'elles avaient nécessitée; lors même qu'il aurait pu en être ainsi, l'air qui s'était introduit dans les parties mises à découvert aurait donné lieu à des résultats qui ne pouvaient représenter l'état du péricarde avant l'ouverture du thorax." (*De la Percussion*, p. 135.) In a later work (*Du Procédé Operatoire*, pp. 114) he describes the more successful results of his attempts to inject the pericardium, and impresses on the student of chest-disease the importance of repeating for himself the experiments on the dead body.

Whoever is desirous of putting this valuable advice into practice, will find that the pericardial sac may be artificially distended with perfect facility, if he make an opening into the free pericardium, just large enough to admit the injecting tube; thrust a pin into the membrane at each side of the opening; and then tie in the tube by passing a thread round the opening, just beyond the pins. The pericardial sac may be conveniently opened for injection, either from below, before the chest is opened, through the central tendon of the diaphragm; or, after the removal of the sternum, through the anterior wall of the sac.

The healthy pericardium, when the size of the heart is normal, is incapable of holding a large amount of fluid.

In a boy, aged 6			the pericardium injected to distension, held	6oz.
——— 9. Heart, 3¼oz. in weight				6
——— 13. ——— ———			about	6
In an adult male —— 12oz.	Right cavities distended held	15oz.	Pericardium distended held	15
	Left	10½		
In a man, aged 50 —— 13oz.			———	22
In an adult female, whose heart was enlarged			———	26

From these and other observations, it may be inferred that in the

Fig. 3.
Pericardial sac not distended.

Fig. 4.
Pericardial sac distended.[1]

[1] The lines indicating the margins of the lungs are hypothetical.

adult, when the heart is healthy, the pericardium, when fully distended, can contain from 12 to 15 oz. of fluid. It is worthy of remark that the right cavities of the heart, in the adult male, when distended, hold the same quantity of fluid as the pericardium.

The quantity of fluid that can be injected into the healthy pericardium, falls very far short of the large quantity which it is sometimes found to contain in disease. There are several cases of Pericarditis on record, in which three pints were found in the sac; indeed Corvisart, in his commentary upon Avenbrugger, states that he has found in it seven or eight pints! (Dr. Forbes' translation, p. 57). It is therefore manifest that, not only is the pericardial fluid greatly increased in some cases of Pericarditis, but that the sac itself is, in those cases, very greatly enlarged, and altered in shape. In order, therefore, to understand the physical effects of pericardial effusion, it is not sufficient to observe the effect of artificial distension, but it is also necessary to notice the increased distension which supervenes when the disease is of some standing. During the early stages of Pericarditis, the comparison between artificial and morbid distension of the pericardium is exact.

Fig. 5.
Pericarditis, with extensive pericardial effusion.

The accompanying engravings illustrate very exactly the effect of artificial distension of the pericardial sac. In the first view, fig. 3, the sac not being distended, fits closely around the various parts of the heart, so that the great vessels, the auricle, and the ventricle, can be readily distinguished through the fibrous membrane. The tendinous surface of the diaphragm, on which the heart rests, forms a plane inclined from behind forwards.

When the pericardium is distended, as in fig. 4, the whole sac becomes swollen and globular, or rather pear-shaped. The outlines of the heart itself, and of its various cavities and vessels, are no longer perceptible. The whole pericardial sac is enlarged, and it consequently encroaches upon, and, to some extent, displaces all the surrounding organs. The pericardium is most distended at those parts where it is most distant from its attachments to the heart, namely, at its lower or diaphragmatic portion, and at the left side, especially in the neighbourhood of the apex.

The form of the distended sac is peculiar. It is composed, as it were, of two spheres, one larger than the other, the smaller sphere resting as an apex upon the larger. The larger sphere encloses the heart itself, and is gibbous towards the left side. The smaller sphere envelopes the great vessels, and it presents three projections, one over each vessel; that over the aorta is most prominent, and lies immediately behind the upper bone of the sternum; that over the vena cava, just to the right of the sternum, is small; and that over the pulmonary artery, to the left of the sternum, is large.

The effect of the distension on the form and position of the central tendon of the diaphragm is marked and characteristic,—instead of being somewhat concave, and inclined from above downwards, it is perfectly convex and semi-globular on the under or peritoneal surface; that surface being more than an inch lower than it is when the sac is empty. The liver and stomach, where they adjoin the central tendon, are necessarily displaced downwards, in exact proportion to the amount of pericardial distension. This protrusion of the central tendon of the diaphragm into the abdomen accounts for the pain so frequently observed to be present in the epigastrium, especially when pressure upwards is made over that region; this was particularly noticed by Mr. Nairne in his communication on Pericarditis, in the 7th volume of the *Dublin Journal;* in ten out of eleven of his cases, epigastric pain on pressure was a marked symptom.

Avenbrugger first noticed the swelling in the præcordia in pericardial effusion; and Corvisart, in his commentary on Avenbrugger, correctly attributed this to the fluid of the pericardium depressing the diaphragm below the edge of the sternum. Dr. Forbes, in illustrating the observations of Avenbrugger and Corvisart, carries out those observations still farther, and accurately attributes the præcordial tumor to the left lobe of the liver, thrust forwards and downwards by the depressed diaphragm.

The great extent to which the liver and stomach may be pushed downwards by the pericardial sac, distended by morbid effusion, will be well understood by a reference to fig. 5, which was taken from a case in which the pericardial distension was very great.

The lateral expansion of the pericardium necessarily causes a corresponding lateral displacement of both lungs, where they overlap the heart. As the expansion of the left side of the pericardium is much greater than that of the right, the left side being free, while the right is attached to the venæ cavæ, there is much greater displacement and compression of the left lung than of the right.

Owing to the peculiar form of the upper part of the distended pericardium, where it forms as it were a swollen pouch over the great vessels, the lungs are, in the earlier stages, displaced at that part to each side, in a manner quite characteristic of recent effusion. The upper portion of the region of pericardial dulness has, in the cases in question, a peculiar peaked form; this is rendered apparent in fig. 4, taken from the artificially distended pericardium, and will be still farther illustrated in the figures from the living subject. It may be traced over the upper portion of the sternum, within an inch of its summit, and over the left second and third costal cartilages. The cause of this peaked

form is rendered evident by the diagram. The swollen pericardial sac, as it protrudes forward, comes in contact, at its most prominent part, with the sternum, and thus presses the lungs away to each side of it.

Corvisart, Piorry, and Hope, observed that the dulness on percussion in Pericarditis, is unusually high, extending to the upper portion of the sternum. M. Piorry has assigned a conical form, the base at the diaphragm, to the space of pericardial dulness. I am not aware that any observer has noticed the peculiar peaked form of the upper part of the region of pericardial dulness just alluded to. This peaked form is only present during the earlier stages of pericardial effusion. During the more advanced stages, if the effusion become more considerable than the pericardium can contain when artificially distended in health, the upper part of the region of dulness loses its peaked form, becomes more extended, and rises so as to be in some cases on a level with the left clavicle, as was accurately observed long since by Senac. This is well seen in fig. 5, taken from a case of extensive pericardial effusion of long standing. In this case it will be observed, that the anterior portion of the left lung is displaced completely backwards, so as to be almost quite hidden by the pericardium, while the compression of the right lung is considerable.

In the case just referred to, the pericardial sac is broader than it is long, instead of being, as in the cases of artificial injection, longer than it is broad. It is evident that the great expansion of the pericardium takes place laterally and to the left, and that the sac, as it enlarges, loses its symmetry. The great lateral increase of the pericardium is evidently due to the resistance offered to the expansion of the sac by the ribs and sternum in front, and by the vertebræ behind. The pericardium fills up the space between the sternum and the spinal column—the aorta and œsophagus, and at the upper part, the trachea, being alone interposed; and, as the pericardium cannot expand much in front or behind, and as its expansion above and below is limited by the upper ribs and the diaphragm respectively, the sac is compelled to expand sideways, that being the only direction in which there is no impediment. It is almost certain, that the distended pericardium exerts an injurious pressure on the thoracic aorta, as it lies interposed and compressed between the pericardium and the vertebræ. This view, which is forced upon us by the anatomical position of the parts, is supported by the frequency with which the lower limbs are cold and œdematous in Pericarditis with extensive effusion. It is probable, that an injurious pressure is sometimes exerted on the trachea at its bifurcation, and that this circumstance in part accounts for the extreme dyspnœa so frequently present in cases of Pericarditis.

The pressure of the distended pericardium being exerted in every direction, not only displaces, in proportion to the amount of distension, the adjoining viscera, but it also causes protrusion of the sternum, costal cartilages, and ribs immediately in front. If the amount of effusion be small, there is little or no protrusion; but if it be great, the protrusion is considerable. In extreme cases (such as that represented in fig. 5), the projection of the thoracic walls, caused by the distended pericardium, is very extensive—in fact, co-extensive with the sac. The thoracic projection is greatest from the fourth to the seventh left costal

cartilages, those parts being over the centre of the pericardium. The prominence, however, extends, in proportion to the distension, over the lower half or two-thirds of the sternum, that bone being in the young arched forwards more and more, from the upper to the lower extremity —over the left costal cartilages, from the second downwards, those cartilages being also all of them stretched further apart, and the intercostal spaces widened—over the costal cartilages to the right of the lower end of the sternum—over the left ribs, in the neighbourhood of, and outside the nipple, from the fifth or sixth to the seventh or eighth—and over the xiphoid cartilage, the epigastrium, and the seventh and eighth left costal cartilages. As the amount of effusion increases, the degree and extent of the thoracic prominence increase also; and as it diminishes, they diminish also. The progress of the case may be happily thus indicated to the eye, when, from the application perhaps of a blister, the extent of the effusion cannot be ascertained by percussion. I have, indeed, observed that the prominence over the cardiac region, which, in health, is usually greater than that over the corresponding region to the right of the sternum, may disappear altogether as the effusion diminishes. MM. Louis and Bouillaud give several cases, in which pericardial effusion caused thoracic prominence. It is probable, that the posterior curvature of the dorsal vertebræ is increased by the pressure of the distended pericardium backwards against the spinal column; and that the relief which some persons, suffering from pericarditic effusion, derive from the bent and forward position, is due to the increased space thus given to the pericardium behind.

The physical effect of the increased quantity of fluid in the pericardium upon the size and situation of the heart itself, its cavities and great vessels, is an important subject which did not escape the attention of the earlier observers. Senac (*Maladies du Cœur*, i. 148) remarks, that the water which fills the pericardium, neither permits the heart to dilate readily, nor to come in contact with the ribs; its cavities, being compressed by the surrounding fluid, cannot dilate sufficiently to receive the blood from the caval and pulmonary veins, and the volume of the heart is itself sometimes lessened. It therefore follows, as Lower had remarked, that in these cases the pulse is feeble or altogether imperceptible, and that even syncope may supervene.

These remarks, drawn, by observation, from living pathology, are illustrated by the effect of artificial distension of the pericardium on the size and position of the heart and its cavities. When I injected fluid into the sac, the heart was lessened by compression; the fluid contents of its cavities were in great part forced forwards into the arteries, and backwards into the veins; the lower boundary of the heart was elevated, and the whole heart and the great vessels were forced unusually upwards, evidently under the influence of the pressure of the liquid, which, lessening the volume of the heart, caused the whole organ to rise and approach more nearly to the seat of its attachment to the lungs and to the systemic vessels. During the injection, the fluid finds its way at first to the lower and back part of the pericardial sac, interposing itself between that portion of the sac, and the posterior wall of the left ventricle, gradually separating those parts farther from each other, and pushing upwards the ventricles, and downwards the central tendon of the dia-

phragm. As the sac becomes more and more distended, the fluid gradually rises, so as to cover the heart in front, separating successively the body of the left ventricle, the right ventricle, the right auricle, and the great vessels from the free pericardium. At length, when the distension is complete, it is probable that the left auricle, the base of the left ventricle, and the great vessels at their inlet or outlet, are alone in contact with the pericardium.

Although morbid pericardial effusion is in many respects closely imitated by artificial distension, yet the effusion is not attended throughout by the same effects as the distension. Indeed, it could not; for while, in artificial distension, we have to deal with a dead heart—in morbid effusion it is a living heart that is acted upon. The living, unlike the dead heart, being in continual alternating motion, offers by its muscular movements, a resistance to the compression of the pericardial fluid. It is to be borne in mind, that each ventricle, during its systole, not only propels the blood, the left through the systemic, and the right through the pulmonic arteries, capillaries, and veins; but that also, through those channels, and aided by the elasticity of the arteries, each propels the blood into, and fills the opposite auricle and ventricle. I found in the experiment on the ass, above related, that on compressing the aorta, less blood entered the right auricle at the very next beat; while the same effect was produced on the left auricle immediately after compression of the pulmonary artery.

Although the impulse of the heart is lessened in power by pericardial effusion, it yet retains considerable force, even when there is a great amount of effusion.

The changes in the position of the heart and the surrounding organs, progressively and gradually induced by artificial distension of the pericardium, may be accurately traced on the living subject of Pericarditis with effusion, during the progressive development of the disease.

Dr. Stokes made the important observation, "that in by far the greater number of our cases, the "friction" sounds were not audible beyond the actual region of the heart. This is a most striking character. I have often observed, that in moving the stethoscope little more than an inch from a situation where the sounds were loud, they totally ceased, although the contractions of the heart continued distinctly audible." ("On the Diagnosis of Pericarditis", *Dublin Journal*, iv, 56.)

As the friction sounds perceptible to the ear, and the vibrations and impulse communicated to the hand are, with few exceptions, only perceptible over the region of the heart affected with Pericarditis, we can gain a very accurate knowledge of the progress of the disease, by observing, during its successive stages, the varying seat of the friction sounds, the vibrations and the impulse of the heart, in connexion with the extent of pericardial dulness.

In the early stages of Pericarditis, when the amount of fluid in the pericardium is not materially increased, the heart and lungs retain their normal position; the extent of cardiac dulness is scarcely altered: the to and fro friction sounds, caused by the right ventricle, are heard over the lower half of the sternum and the adjoining left costal cartilages, and the rubbing sound of the left ventricle at the apex is heard only during systole, when the apex, pushing aside the interposed portion of

lung, rubs against the fifth rib and intercostal space; the vibrations are seldom perceived; the impulse of the heart is felt at the usual situation, between the fifth and sixth ribs. As the fluid progressively increases, it pushes aside the cardiac margins of the lungs more and more from before the heart, that organ being itself not yet notably elevated; the extent of pericardial dulness is materially increased; the right auricle is now exposed, and, while the to and fro friction sounds of the right ventricle are heard behind and to the left of the lower half of the sternum, those of the right auricle are heard to the right of that portion of the bone. The auricular tip of the right auricle, during systole and diastole, moves from side to side, first to the right and then to the left margin of the sternum, close to the third costal cartilages; and between those cartilages, the smooth, prolonged, equal double friction murmurs are distinctly audible. The friction sounds over the left ventricle are now usually both diastolic and systolic. The vibrations are sometimes communicable to the hand. The impulse at the apex is perhaps higher, and is more extensive than usual between the left costal cartilages.

When the pericardium is distended with fluid so as to push the heart materially upwards, the extent of pericardial dulness is still farther increased. The friction sounds, instead of being audible as low as the sixth costal cartilage and the lower end of the sternum, are only heard above the lower fifth of the sternum and the fifth costal cartilage. The vibrations are frequently felt by the hand, and occupy the same space as the friction sounds. The impulse of the apex is perceived over the fifth, instead of the sixth intercostal space; the impulse of the right ventricle is felt from the second to the fifth costal cartilages; and the peculiar sharp diastolic impulse may be perceptible both over the first and second intercostal spaces. When the effusion further increases, so that the ventricles are in great part separated by a layer of fluid from the parietes, the upper part of the right ventricle and the great vessels are still in contact with the first, second, and third intercostal cartilages and the spaces between them. The friction sound, the vibration, and the impulse, are now only to be perceived between the first and second, and the second and third costal cartilages.

When the sac is completely distended, and the surface of the heart is completely separated by the fluid from the parietes, then neither friction sound, vibration, nor impulse are anywhere perceptible.

As the fluid gradually disappears, and the heart comes again, by little and little, in contact with the parietes, the phenomena progressively re-appear, descending in the inverse order to that in which they disappeared and ascended; until at length, when the fluid is absorbed, the whole heart returns to its normal position, or, if enlarged, goes even beyond it. The friction sounds and vibrations, if present, are perceptible as low down as they were at first, and the impulse descends from space to space, so that at length the heart's apex beats as usual between the fifth and sixth ribs. As the heart, then, is pushed upwards by the increased effusion, the friction sounds, the vibrations, and the impulse are necessarily pushed up likewise; and as the heart descends, when the fluid diminishes, resuming its position, the friction sounds, vibrations, and impulse descend and resume theirs.

I believe I was the first to point out that the seat of the impulse is raised in Pericarditis with extensive effusion; and I here extract the passages relating to that subject, from my paper on the "Situation of the Internal Organs", published in the *Provincial Medical and Surgical Transactions* for 1844.

"In cases of pericardial effusion, where the heart is not enlarged, the volume of the heart is lessened and pushed upwards towards its point of attachment, and the ventricles being raised and seated behind the middle third of the sternum, and the third and fourth, or fifth costal cartilages.

"As the ventricles are raised, the seat of the impulse, caused by their contraction, is raised also. In a case in which the effusion was very extensive, the second and third costal cartilages, and the first and second intercostal spaces, protruded during the impulse of the ventricles, while the third intercostal space and the fourth costal cartilage fell slightly back, and the fourth intercostal space receded to a still greater extent. These movements of falling back below, while there was advance above, were visible, and gave the effect of undulation; while the upper part rose during systole, the lower part fell; towards the diastole, when the parts resumed their places, the lower parts rose while the upper parts fell. In another case, the impulse was unusually high, being seated between the third and fourth intercostal spaces; but the lower spaces and ribs did not fall back, the effect of undulation was not produced.

"As the outlines of dulness, due to effusion, diminished in the above cases, the seat of the impulse descended."

Dr. Taylor has noticed the connexion of the elevated impulse with considerable pericardial effusion, in the valuable series of cases of Pericarditis, published by him in the *Lancet* for 1845-46. In one case, (the seventeenth) he observed, that as the pericardial dulness diminished, the impulse at the apex fell from the fourth to the fifth intercostal space.

More recently this point has been noticed in the following words, by Dr. Walshe, in a Clinical Lecture on an interesting case of Pericarditis, published in the *Lancet* for Feb. 10, 1849, p. 148:

"Another singularly important sign of pericardial effusion (twisting upwards and outwards of the heart's apex in such manner, that the beat of the apex is felt and seen in the fourth instead of the fifth intercostal space, and on, or a little outside, instead of inside, the vertical level of the nipple) was clearly detected in Cradock; and that the elevation of the heart's point was the effect of the recent effusion (as in ordinary cases), and not of the old inflammation, was absolutely demonstrated by the descent of that point to the fifth intercostal space a few days later."

In the second of the two cases referred to in the quotation from my paper on the Internal Organs, the impulse of the apex and the right ventricle was seated between the third and fourth intercostal spaces, and was somewhat more to the left than usual at the apex; a circumstance pointedly noticed by Dr. Walshe, in his case in the quotation just given. In the first of my two cases, the impulse was only present in the first and second intercostal spaces, and was evidently due to the

movement of the upper part of the right ventricle, and, probably, of the pulmonary artery. In this patient, the fluid must have been in part interposed between the body of each ventricle and the free pericardium, thus shielding the parietes from the more extensive impulse.

The appearance of undulation, caused by the impulse over the first and second intercostal spaces, which was observed in the case just referred to, was noticed in the following words by Senac, one of the earliest writers on pericardial effusion:

"Parmi tant de signes incertains, j'ai cru en remarquer un qui les rendrait moins équivoques, s'il était bien constaté; il est d'autant plus facile à observer, que les yeux peuvent le saisir; on aperçoit très-clairement entre la troisième, la quatrième, et la cinquième côte, les flots de l'eau contenue dans la péricarde, lorsqu'il survient des palpitations; ce n'est pas qu'on entrevoie quelque mouvement semblable dans celles qui ne sont pas accompagnées d'une telle hydropisie; mais elles ne produisent pas un mouvement onduleux, et qui s'étende fort loin."

Dr. Latham, in his recently published Clinical Lectures on Diseases of the Heart, thus notices the interesting subject just referred to:

"In Pericarditis, while the præcordial region is dull to percussion, and the exocardial murmur is heard, an undulating motion often becomes visible to the eye in some of the spaces between the cartilages of the ribs on the left side. It has always been either between the cartilages of the second and third ribs, or of the third and fourth, or between both at the same time, that I have seen motion, and never in any other situation.

"So, too, in Pericarditis, while the præcordial region is dull to percussion, and a murmur is heard, a vibratory motion often becomes sensible to the touch in some spaces between the cartilages of the ribs on the left side. As I never saw the undulation, so I never felt the vibratory motion elsewhere than either between the cartilages of the second and third, or of the third and fourth ribs, or between the cartilages of both simultaneously.

"The vibration, I believe, is the more frequent of the two, and often occurs unaccompanied by any visible undulation. But the undulation was never apparent to my eye without my finger being able to detect a sensible vibration at the very same spot.

"Again where they do appear, it is not (as far as I observe) ever at a very early period of the disease. In Pericarditis (as far as I have observed) they never occur but as accompaniments of the exocardial murmur and the præcordial dulness. And further, when they do occur (as far as I have observed), they always appear later and cease earlier than these do."

These observations of Dr. Latham render it perfectly clear that the appearance of undulation cannot be due, as Senac had supposed, to the presence of fluid at its seat. The co-existence of friction sounds and of vibrations with the undulation, necessarily forbids the supposition that fluid was present; as the presence of fluid would have separated the two surfaces of the pericardium, and so extinguished the friction sound and the vibrations.

It is manifest, therefore, that the appearance of undulation, so often observed in cases of extensive pericardial effusion, is not due to the

reality of undulation from the presence of fluid, but to the slight and peculiar impulse between the cartilages of the first, second, third, or fourth ribs—an impulse due to the slight systolic shock of the upper part of the right ventricle, and which is usually followed, at the uppermost part, by the peculiar sharp diastolic shock of which I have spoken above at p. 895.

When the anterior walls of the heart are altogether separated from the free pericardium, neither impulse, undulation, friction sound, nor vibration, can be any longer perceived. How, indeed, can they, when the heart's surface is no longer in contact with the parietes? It is clear that if, by any means, we can, for the time, remove the fluid from between the roughened and inflamed pericardial surfaces, bring those surfaces again into contact, and so reproduce attrition between them, we shall again bring out the friction sound. This I have been able to effect in such cases, by exerting pressure upon the cartilages of the ribs and the spaces between them. The interposed layer of fluid is usually very thin, and I have found it to be readily displaced by means even of inconsiderable pressure. In order to diffuse the pressure, and so to prevent pain, I inserted a thin plate of wood into the large end of the flexible stethoscope, and I found that when, by careful manipulation, pressure was made with this plate, it excited no uneasiness, and it also, owing to the increased extent to which the surfaces were brought in contact, still further augmented the friction sound.

I found that, by means of pressure, I was not only enabled to bring out friction sounds, previously absent, owing to the interposition of fluid between the opposite surfaces: but that I was also able, in almost all cases where the friction sounds were present, to render those sounds louder and rougher. I wish particularly to call attention to the fact that exocardial murmurs can be heard with greater ease and clearness when pressure is applied over the region of the heart, and to demonstrate the value of the sign in question in the detection of Pericarditis. I shall take a future opportunity of returning to this interesting subject.

15, Lower Brook Street, London, September 1849.

CASES OF MESO-COLIC HERNIA.

By THOMAS B. PEACOCK, M.D., Physician to the Royal Free Hospital, etc.

SYSTEMATIC writers, in enumerating the various causes of internal strangulation, usually refer to epiploic, mesenteric, and meso-colic Hernia. The cases, however, which have been described under these names, have consisted most generally of strangulations of portions of the intestine through apertures in the epiploon, mesentery, or meso-colon.

Of affections of this description, a considerable number are on record. Among these may be mentioned—1. The case related by De Haën,[1] and made the subject of a graduation thesis by Knobloch,[2] in which a portion of ileum was strangulated in an aperture in the meso-colon of the sigmoid flexure. 2. The case of Saucerote,[3] in which portions of the cæcum and colon had passed through an aperture in the mesentery. 3. The instance related by Monro,[4] as having occurred to Dr. Rutherford, in which a portion of ileum was strangulated in an opening of the mesentery. 4. An example of internal Hernia, described by Rokitansky,[5] in which the cæcum was pushed from behind through an aperture in the mesentery of the lower part of the ileum. 5. A case referred to by Grosse,[6] as published by Dr. Davis, in which a portion of colon was strangulated in an opening in the meso-colon of the sigmoid flexure. 6. The case recorded by Mr. Ranking,[7] in which, part of the ileum having been torn from its mesenteric attachment, a loop of intestine became strangulated in the opening so produced. 7. That related by Dr. Hutton,[8] in which a portion of the small intestine was strangulated in an opening on the mesentery; and lastly, a similar case described by Mr. Phillips.[9] To these instances may be added one, probably of the same kind, related by Schroeder Van der Kolk,[10] and it would not be difficult to collect others. The cases referred to by Baudelocque,[11] Callisen,[12] Arnaud,[13] and Scarpa,[14] in which loops of intestines were strangulated through apertures in portions of epiploon or mesentery contained in hernial sacs, are also analogous.[15]

Displacements of this description, in which the intestines are not protruded from the abdominal cavity, cannot, however, properly be re-

[1] Ratio Medendi, tom. iii, f. 359. Pars XI, cap. xv, s. 11.

[2] De Entero-mesocolocele. Lugd. Bat.; 1797.

[3] Hevin. Mem. de l'Académie de Chirurgie, t. iv, p. 239. Paris; 1784.

[4] Observations on Crural Hernia, p. 12. Edin.; 1803.

[5] Medicinische Jahrbucher des Œst. St. 1836, quoted in Brit. and For. Med. Rev., vol. iii, 1837, p. 500.

[6] Path. Anat. 2nd edit., p. 596. Philadelphia; 1845.

[7] Med. Gaz. 1838. Brit. and For. Med. Rev. vol. vii.

[8] Trans. of Path. Soc. of Dublin. Dublin Journal, vol. xv, p. 294.

[9] Med. Chir. Trans., vol. xxxi, p. 14.

[10] Dissert. obs. varii argumenti. Groning.; 1793. Quoted by Ploucquet.

[11] L'art des Accouchements, t. i, p. 509.

[12] Acta Hafniensia, t. i, p. 164.

[13] Mem. de Chir., t. ii, p. 587.

[14] On Hernia, Wishart's Trans., p. 154, where the other three cases are also quoted. See also, Lawrence on Hernia, p. 630, 5th edition, 1838.

[15] Very recently, my friend and colleague, Mr. Gay, has mentioned to me a case of strangulation of a portion of intestine contained in an Umbilical Hernia, through an aperture in the omentum.

garded as Herniæ; but, in the form of disease which I am about to describe, an aperture exists in one of the layers of peritonæum forming the mesentery or meso-colon, and the intestines entering this aperture, and separating the two folds of which the meso-colon and mesentery are composed, form true ruptures, situated in a sac external to the abdominal cavity, and formed by the layers of peritonæum. This form of disease would appear to be of very unfrequent occurrence; indeed I am only able to refer to two examples of the affection, besides those which it is the object of the present paper to place on record. The cases alluded to, which are related by Sir A. Cooper,[1] I shall quote in detail.

The first case is one of mesenteric Hernia, which, we are informed, was found by Mr. Pugh in the body of a man, sent for dissection to St. Thomas's Hospital. "The man had been a patient in Guy's Hospital, under Mr. Forster, and had suffered the operation of amputation. He appeared about 55 years of age. When the abdomen was opened for demonstration, and the omentum and colon were raised, the small intestines did not appear; but in their stead, in the middle of the abdomen, was found a tumour, situated upon the lumbar vertebræ and extending down to the basis of the sacrum. When this tumour was opened, it was found to be a sac, containing all the small intestines but the duodenum. Mr. Pugh was so obliging as to give me the body for further examination. I found that the sac was formed by the peritonæum, which completely surrounded the intestines, except at the posterior part, where there was a small hole, by which the intestines had entered. Tracing the intestine from the stomach towards the anus, the beginning of the jejunum was found passing into the sac at the posterior part; and, by the same opening, the ileum passed out on the right side, and descending to the right inguen, it entered the large intestine in the usual manner. What effect during life this unusual position of the intestines had produced, I could not ascertain. Every inquiry was made, but nothing had happened during the time the patient was in the hospital, that could lead to a suspicion of any disease having existed in the abdomen. However, from the confinement the intestines had suffered within the bag, I should naturally be inclined to conclude, that the peristaltic motions of the bowels had been less free than usual, and that, from this state of intestine, frequent constipation would have arisen; but, if this was the effect, it had never gone so far as to produce inflammation, as the intestines did not appear thickened, and had not contracted any adhesions, either to the sac or to each other."

The second case related by Sir A Cooper, is one of meso-colic Hernia, and is described as follows:—"On opening the abdomen of a subject brought for dissection, the omentum and large intestines being turned aside, a large tumour was discovered on the left side of the abdomen, its upper part resting on the left kidney, whence it extended downwards to the brim of the pelvis, its lower part lying in the fold of the sigmoid flexure of the colon. The large intestines took their usual course in the abdomen, excepting that the cæcum and beginning of the colon were placed nearer to its centre. On the left side, the colon was placed

[1] The Anatomy and Surgical Treatment of Abdominal Hernia. 2nd Edition, by Key, pp. 73, 74. These cases are illustrated by plates.

between the tumour and the abdominal muscles, and the swelling reached from the termination of its great arch to its sigmoid flexure. The duodenum, a small part of the jejunum, and the termination of the ileum, were the only portions of the small intestines which were visible. Upon examination of the tumour, it was found to contain all the small intestines which were not seen on first opening the abdomen, and the orifice by which they had passed into the tumour was situated on its right side. The orifice was more than sufficiently large to permit the passage of two folds of the intestines, even in their most distended state, and through it all the small intestines were readily drawn from the bag. The sac in which they were contained was formed between the laminæ of the peritonæum of the meso-colon, in the interior layer of which, on the right side, was placed the opening by which the intestines had entered. The bag was sufficiently large to be capable of containing all the small intestines in a half-distended state. Two-thirds of the orifice were formed of peritonæum only, and one third was covered by a branch of the inferior mesenteric artery. The peritonæum which formed the sac, was somewhat thicker than that which was contiguous to the abdominal muscles; but, upon the whole, it had undergone less alteration, in that respect, than the degree of pressure which it had sustained would have led me to expect. When the intestines were very much distended with air or food, the opening into the sac was sufficiently large to allow of the escape of a part of them into the abdomen."

Of both these cases the preparations, though in a very imperfect state, are deposited in the museum of St. Thomas's Hospital. Somewhat analogous to these cases is one of epiploic Hernia, referred to by Blandin[1] and Jobert,[2] in which the whole of the small intestines were found to have passed, through the foramen of Winslow, into the posterior cavity of the epiploon, whence a piece of intestine had been protruded through an aperture in the transverse meso-colon, and had become strangulated. Rokitansky[3] also mentions having found a portion of intestine strangulated in the foramen of Winslow. These are all the cases, similar to those which I am about to relate, of which I have been able to obtain particulars. I shall now therefore describe the two examples of Meso-colic Hernia which have fallen under my own notice.

Case 1. *Typhus Fever, with the characteristic eruption: death on the ninth day. Hernia of the whole of the small intestines, except the duodenum, between the layers of the meso-colon.*

Henry Morgan, aged 30, was admitted into the Royal Free Hospital on the 25th of April, 1849. He was taken ill on the 21st, with difficulty of breathing and pain in the chest. At the time of admission the tongue was white and moist; the skin was moderately warm; the pulse quick and feeble. He had much tremor of the extremities, and complained of pain in the loins and of thirst. His bowels had been freely relaxed after a dose of calomel. His habits were stated to be regular; but his calling, that of a musician in the practice of playing at public-houses, rendered this very doubtful. He was directed to take one

[1] Traité d'Anatomie Topographique, p. 442. Paris: 1828.
[2] Traité des Maladies du canal intestinal, t. i. p. 522. Paris: 1820.
[3] Handbuch der Pathologischen Anatomie.

ounce of the chlorate of potash mixture every three hours, and to have low diet.

26th. The pulse is quick and weak, and the skin warm and bathed with profuse perspiration; the tongue is covered with a thick brown-coloured, but moist fur; he is much excited, and talks rapidly; there is great tremor of the extremities; the bowels have not been relieved since yesterday. To add to each dose of the mixture, one drachm of the compound tincture of bark; to have beef tea and arrow-root.

27th. Last night he was extremely delirious, and to-day he continues very excited. There is great tremor of the limbs, and a very hurried manner of talking; the pulse is quick and feeble; the tongue is moist, but covered with a thick brown fur; the eyes are pale and glistening, and the pupils large and somewhat fixed. There is a copious eruption over the whole of the trunk, shoulders, arms, and thighs; it is not elevated above the surface, and generally fades on pressure, but there are a few spots, of a deep purple colour, which do not entirely fade. To have a blister on the back of the neck; the head to be shaved, and kept cool by the application of ice. To take a mixture containing five grains of the sesquicarbonate of ammonia and one drachm of the tincture of bark, in an ounce of infusion of serpentary, every two hours; to have four ounces of brandy during the day; a draught, containing half a drachm of the aromatic spirit of ammonia, the same quantity of the compound sulphuric ether, and half a grain of morphia, to be given at night, if the delirium continue.

28th. He slept at intervals last night, and was quieter and more collected when awake. To day there is less tremor, and he is also less excited. The pulse is 120, and feeble; the tongue is covered with a thick, dark brown-coloured fur, and dry; the conjunctivæ are somewhat injected, but the pupils act on the stimulus of light; there is some thrill in the temporal arteries; the bowels have been once relieved, and he makes water freely; the abdomen is flaccid and free from tenderness; the eruption is fully out and generally fades on pressure. The urine has a specific gravity of 1020, and is not albuminous. To continue the mixture and the brandy; to repeat the draught at night, and apply ice to the head.

29th. The tongue is dry, brown, and chapped; the pulse quick and weak. There is less tremor, but some torpor; he slept comfortably at intervals last night; altogether he seems better; the eruption is still out; the pupils are rather large, but act on the stimulus of light, though somewhat sluggishly; the bowels have been once naturally relieved. To continue the same treatment as before.

30th. Yesterday, a large patch of deep purple colour was noticed on the left buttock, and his symptoms changed for the worse. After the visit, he continued to get lower, became comatose during the night, and the skin was cool and bathed in profuse perspiration. The spot on the left buttock is surrounded by erysipelatous redness, and in places is quite black, and the integuments are there much loaded. The tongue is dry and brown, and the teeth covered with sordes; he breathes somewhat stertorously; the conjunctivæ are injected, and the pupils large and fixed, and he is in a state of extreme and general tremor. The bowels have not been relieved, but he has passed urine in bed; the eruption is

still out, and in part fades on pressure; the pulse is rapid and vibratory. He died at 4 P.M. this afternoon, or on the ninth day of the disease.

On *post-mortem examination*, the body was found covered with dark ecchymosed spots, which were most conspicuous in the dependant parts. On raising the calvarium, there was found an extensive effusion of fluid beneath the arachnoid, which elevated that membrane above the level of the convolutions; much fluid of a slightly opaque character was also found in the ventricles, and a large quantity escaped from the base of the brain and the spinal canal. The brain was somewhat soft, and the vessels, both of its substance and the membrane, contained much semi-fluid blood.

The Cerebrum weighed.....	53oz.	0 drachms, avoirdupois.
The Cerebellum	5	8
The Pons Varolii and Medulla Oblongata ..	1	0
Giving a total weight of.....	59	8

The lungs were free from adhesions; the right lung was congested posteriorly, as was also the left to a greater degree. The bronchial mucous membrane was injected, and the tubes contained much spumous fluid of a sanguineous colour. The heart was large and flaccid, and the blood in its cavities was semi-fluid, and contained no coagula. The spleen was large, and so soft as to become pultaceous when handled. The kidneys were engorged. The liver was healthy, though somewhat congested. The mucous membrane of the stomach and duodenum was somewhat reddened. The small intestines were healthy, and the solitary glands and patches of Peyer in the lower part of the ileum were only detectable on careful examination, and presented no appearance of disease. The mesenteric glands were not enlarged.

The most interesting feature in this case was, however, the existence of a *meso-colic Hernia*.

On opening the abdomen, a portion of the liver, the stomach, and the transverse arch of the colon were exposed, but the small intestines were nowhere seen. There existed a small, but thick, band of adhesion between the commencement of the transverse colon and the right lobe of the liver, on the right side of the gall-bladder. At this point the colon made its turn to the left side, and thence passed down the middle of the abdomen to the brim of the pelvis, where it was suddenly deflected upwards, and passed to the usual situation of the commencement of the sigmoid flexure. The remainder of the canal pursued its natural course. None of the small intestines were visible on opening the abdominal cavity, but the portion of the colon, described as descending in the middle of the abdomen, was pushed forwards by a tumour situated behind it, which projected on each side (see fig. 1). This tumour was found to consist of a hernial sac, containing the small intestines, formed within the layers of the meso-colon. By drawing aside the descending portion of the colon, so as to expose the meso-colon, the tumour described was made to project on the right side of the intestine, and formed a mass the size of two large clenched fists. On tracing the colon from the caput cæcum downwards, a band of meso-colon was seen passing from near the termination of the ileum towards the middle of the meso-colon of the transverse arch; this band formed the right boundary of the

tumour, while its left side was bounded by the descending portion of the transverse arch of the colon. Below, the sac overhung the margin of the pelvis, and above, it was bounded by the transverse colon. On drawing the tumour from the caput cæcum, the portion of ileum passing out of the sac was brought into view. The point at which the intestine escaped was about two inches above the cæcum; the ileum was there firmly adherent on the under side, by old attachments, to the margin of the aperture; above, there was an opening with a concentric edge, through which the finger could be freely passed into the sac. From the upper side of the ileum, the mesentery was reflected into the meso-colon of the ascending portion and caput cæcum. Externally, the sac was somewhat opaque and much thickened, especially below, where it was adherent by several dense bands to the peritoneal lining of the brim of the pelvis; while, on the inside, it was smooth and glistening, though opaque. The whole of the small intestines, except the duodenum, were contained in the hernia; and on their being removed, the jejunum was found entering the sac at its upper and posterior side, while the ileum escaped from it at its lower and right margin. The sac was covered in most places by a moderate deposit of fat, through which the convolutions of the intestines could be seen. The omentum and mesentery were healthy, and the intestines presented no appearance of having been the seat of disease. At the distance of about eighteen inches above the termination of the ileum, there was a small diverticulum, about

FIG. 1. 1, 1. The sac of the Hernia situated between the folds of the meso colon.
2. The lower portion of the ileum passing out of the hernial sac.
3. The caput cæcum coli. 4. The displaced portion of the transverse colon.

two inches in length, and of about one-fourth the diameter of the intestine.

In this instance, the symptoms during life, and the morbid appearances detected in the body after death, corresponded with the ordinary features of cases of typhus. The peculiar displacement of the small intestines was not productive of any symptoms of abdominal obstruction while the patient was under observation in the hospital; nor did it appear by inquiry after death, that he had previously suffered from any indisposition which could be ascribed to the Hernia.

In the following case the patient presented symptoms of ileus, and the small intestine, at its point of exit from the hernial sac, not only presented a considerable diminution of its calibre, evidently of long duration, but was the seat of active inflammation, which had proceeded to incipient gangrene.

CASE II. *Symptoms of Ileus, fatal in forty-one hours: meso-colic Hernia, containing nearly the whole of the small intestine: acute inflammation and gangrene, commencing above a contraction at the point of escape of the intestine from the sac.*

Bryce Reid, aged 27, a carter, was seized, after returning to work from his breakfast on the 10th April, 1843, with severe pain in the stomach, and vomiting. He applied to a medical man in the neighbourhood, who gave him some medicine, and ordered an enema to be administered. He was admitted into the Royal Infirmary of Edinburgh the same evening, at about five o'clock; he then stated that his bowels had not been relieved since two o'clock on the preceding afternoon; he complained of pain in the stomach, and the abdomen was tender and tympanitic; he vomited all the ingesta, and also had cramps in the muscles of the lower extremities. Appropriate medicines were prescribed, and he was directed to have an enema. On the following morning he had obtained no relief to his sufferings; the bowels had not been acted upon, and he had urgent vomiting, the matters discharged being sometimes merely the food or drink which he had taken, and having, at other periods, a yellow colour and very fetid odour, like feculent matter. The muscles of the lower extremities and the abdominal muscles were in a continued state of spasm, and the abdomen was extremely tender and tympanitic; his face was pale, and the expression of countenance anxious; the extremities were cool, and the pulse quick and weak. These symptoms continued throughout the day, and in the night he had two convulsive attacks, during which he was stated to have been insensible. He continued to vomit almost incessantly up to the period of his death, and had no evacuation from the bowels throughout his illness. He died at two o'clock on the morning of the 12th, forty-one hours after the commencement of the symptoms.

The *post-mortem examination* took place on the 14th.

On opening the abdominal cavity, the descending colon was found lying in front of the cæcum and ascending portion, while the whole of the front and left side of the abdominal cavity was occupied by a large tumour, through the thin walls of which the small intestines were observed, in a state of great distension, and of a deep purple colour. On close examination, this tumour was found to consist of a Hernia of the small intestines, within the folds of the left meso-colon. On dividing

the anterior layer of the sac, the whole of the small intestine, except the duodenum, was found to be contained in it (see fig 2). The jejunum entered above, then escaped again, and after forming a short loop, re-entered, and continued to occupy the sac, till the ileum passed out about two inches above the cæcum. The jejunum and upper portion of the ileum were only slightly reddened externally, though throughout much inflated; but, near the point at which the ileum made its escape from the sac, the coats of the intestine were intensely inflamed, livid, and almost gangrenous; and the mucous membrane in the corresponding situation was perfectly black. On drawing the small intestine from the sac, a constricted portion was exposed, situated about two inches above the ileo-cæcal valve; and the coats of the intestine at this point were much thickened. The inflamed portion commenced immediately above the seat of constriction, and corresponded to a sharp

FIG. 1. 1, 1. The sac of the Hernia laid open and drawn back so as to expose the distended small intestines contained in it.

2. The portion of the ileum which was permanently contracted from the pressure of the crescentric edge of the opening into the sac.

3, 3, 3. The cæcum and colon.

4. The stomach.

margin formed by the edge of the meso-colon, beneath which the intestines had become herniated. The aperture into the sac was of sufficient extent, after removing the intestine, to admit the four fingers on the same plane; and its lower edge was thick, and apparently in part formed by one of the meso-colic arteries. The rupture was evidently of long standing, as shown by the existence of cellular adhesions between the crescentic edge and the jejunum above and the ileum below, and also by the permanent contraction of the ileum where it had escaped from the sac. On removing the whole of the small intestines, the form of their containing sac was very distinctly displayed: in front it was bounded by the expanded portion of the posterior fold of the left meso-colon; the pancreas and duodenum crossed its upper side; its right margin was formed by the descending colon and its anterior fold of meso-colon; and on the left side and below, it was continued into the peritonæum lining the abdominal muscles, and passing into the pelvis. The sac, as before stated, was thin and transparent, and presented the usual meso-colic vessels; but, where it became continuous with the peritonæum lining of the abdominal parietes, it was thickened, and in places opaque. From the period during which the hernia had existed, the posterior fold of the meso-colon, which was that chiefly implicated, had been sufficiently expanded to form the anterior portion of the sac, and the colon had been entirely displaced to the right side.

Remarks. In order to understand the mechanism of the form of Hernia of which the cases related afford examples, it must be remembered that, at the point at which the small intestine passes beneath the superior mesenteric artery and assumes the name of jejunum, it acquires a covering of peritonæum, derived from the most posterior of the two layers, reflected backwards from the omentum, and forming the lower layer of the meso-colon. If, therefore, at this point there be any deficiency in the peritonæum near the spine, so that an aperture be left in the anterior layer of the meso-colon, the small intestine, entering by such aperture, may gradually separate the two folds of peritonæum, of which the meso-colon consists, and may ultimately come to be entirely lodged in a sac so produced. A true hernia will thus be formed, inasmuch as the intestine has entirely escaped from its natural cavity, and is contained in a sac formed by the peritonæum. This seems to be the mode in which the cases of Meso-colic Hernia are produced.

The question, however, arises—How is the aperture, supposed to exist in the anterior layer of meso-colon, formed? Sir A. Cooper, after suggesting that it may be due, either to rupture from a blow received on the abdomen, or to an originally imperfect formation of the meso-colon, concluded in favour of the latter, as the most probable; and an attentive consideration of the subject has led me to adopt the same view. The peritonæum, both from its texture and its seat, is but little liable to be affected by external injury; and, were it so injured, it is scarcely probable that one of its layers should be ruptured while the other remained entire; still less does it seem likely that such an accident should not leave behind it obvious traces of its occurrence, in the form of adhesions or thickening of the membranes. In the four cases which have been related, there existed nothing to warrant the supposition that

the abdominal organs had ever been the seat of serious inflammation. The degree of alteration in the different layers and reflexions of peritonæum, and in the intestines themselves, was, indeed, only such as would necessarily ensue from the long continued pressure of the displaced parts. It is difficult, therefore, to suppose that any material injury of the abdomen could have been sustained; and it seems most probable that the meso-colon must have been originally formed imperfectly. This inference is corroborated by the existence of a small diverticulum[1] in connexion with the lower part of the ileum, found in the first of my own cases. The process of reasoning here adopted is further confirmed by the comparatively frequent occurrence of apertures extending entirely through the mesentery, as in the cases at first referred to in the paper. These are doubtless due to violent and irregular peristaltic action of the intestines, occasioning lacerations of both layers of their mesenteric attachment; and are so frequently found, that, did the same cause give rise to rupture of one only of the layers of peritonæum, the true Meso-colic or Mesenteric Hernia should more commonly occur.

Sir A. Cooper has remarked, that this form of Hernia is little likely to be productive of strangulation. The displaced intestines not being subjected to such severe or unequal pressure as to produce much thickening or contraction of the orifice of the sac, the connexion between the Hernia and abdominal cavity will consequently remain free, and the intestines can pass into or out of the sac, according to their varying amount of distension. The second of the cases which I have just related is somewhat opposed to this view, as, though the orifice remained wide, its crescentic edge had nevertheless exercised such pressure as to give rise to a very decided contraction of the calibre of the intestine, evidently of long duration, and which must have interfered with the free action of the bowels, and had probably previously given rise to serious indisposition. Unfortunately, however, the history of the state of the patient before his last seizure could not be obtained. In the first case related, however, there is no reason to believe that the displacement of the intestines had been productive of any material inconvenience, though it is probable, that the peristaltic action of the bowels, in the sac, was less free than if they had occupied their natural position in the abdominal cavity. Sir A. Cooper suggests, that, from the same cause, in the case of Mesenteric Hernia which he has related, there had probably been a state of habitual constipation; but in the Meso-colic Hernia, he thought that the displacement could have exerted no material influence on the functions of the bowels.

[1] The diverticula found so frequently within twelve or eighteen inches of the termination of the ileum, are, it is believed, now generally admitted to be the remains of the canal leading to the vesicula umbilicalis, in an early period of fœtal life. Were there any doubt on the subject, the cases related by Meckel, Wilkinson King, and others, in which, after birth, such diverticula were found opening at the umbilicus, must decide the question. Though diverticula are found in other parts of the alimentary canal than the ileum, it is certainly very rarely; and, when they occur in such situations, they may safely be regarded as originating in other causes.

CLINICAL OBSERVATIONS.

By JOHN ROSE CORMACK, M.D. Edin., F.R.S.E., Fellow of the Royal College of Physicians of Edinburgh, and formerly one of the Physicians of the Royal Infirmary and Fever Hospitals of that City.

INFANTILE REMITTENT FEVER, TERMINATING IN HYDROCEPHALUS; DEATH PRECEDED BY CONVULSIONS. POST-MORTEM EXAMINATION; KIDNEYS CONGESTED; UREA, AND URIC ACID IN THE BLOOD.

THE relation which renal toxæmia bears to some of the symptoms, and in particular to the coma and convulsions which so often usher in death in acute Hydrocephalus, is often very intimate, and of much practical importance. I am inclined to think that, by a just appreciation of it, I have often been led to adopt, and persevere in, treatment which has proved successful in the most discouraging circumstances. On the present occasion, however, it is not proposed to detail cases in which recovery took place.

The following is the history to which reference was made at p. 703.

CASE of E. A., aged 18 months. The subject of the following history was, a few days before her decease, as robust, joyous, and beautiful an infant as could delight the eye. From my attendance at her birth, till the seizure with her fatal illness, she was much under my notice when visiting other members of the family; but, except on one occasion, it was never necessary for me to prescribe for her; and, then, the malady was so transient and trifling, as to have left no trace in my memory; and the only record is the formula for three aperient powders, entered in my daily prescription book. It can, therefore, be truly said, that her last was her only illness. Her teeth had, as the mother remarked, been found by her accidentally, and with surprise, as their coming had occasioned no feverish symptoms, whereas the other members of her numerous family had all suffered severely during dentition. The child was always plump, and firm in flesh; and she walked and spoke much better than is usual with infants of her age.

On the 14th and 15th June 1849, she was observed, both by the mother and nurse, to be fretful; and, on the latter day, she was drowsy. These symptoms were ascribed to the constipated state of the bowels; and to remedy that condition, the mother gave a dose of rhubarb and magnesia. It produced three dark-coloured, offensive, fluid stools. After these motions, the infant seemed decidedly better; she took some food with avidity, played for a short time with her brothers and sisters, and then fell asleep. The sleep continued, with hardly even momentary awaking, from 4 P.M. on the 15th, to 9 A.M. on the 16th, when she woke, and though in a languid condition, seemed contented and cheerful. At this time, when lying on her mother's knee, after passing a small quantity of high-coloured urine, and taking some food, she was observed to partially turn up the eyes and clench the fists; and about 11 A.M. the eyes suddenly turned quite upwards, the head and neck became bent rigidly backwards, and the whole frame was slightly convulsed. This seizure, which did not last many minutes, was the first thing which excited alarm, and caused me to be called in. I saw the little patient at 12½ noon. She was then in a deep and tranquil sleep. The face was pale;

the surface rather cold, especially the feet; and the pulse, 120. On being awaked, she became flushed and fretful; when I was examining the abdomen, mouth, etc., and scarifying the gums, she struggled and cried, as an infant of her age might be expected to do when unexpectedly roused; but she showed no signs of stupor, nor of any tendency to convulsions. The abdomen was not distended; the mouth was rather hot, and the gums over the first and second molars, on both sides, were somewhat, though not greatly, swollen; the tongue was rather dry, and very foul. It is important to mention, that the mother ascribed the seizure to exposure, when heated, to a draught of cold air from the river; and the continuance of the illness to the close and sultry weather. The condition of the atmosphere was such as to account for some part of the soporose tendency, as at that time many—healthy, as well as sick—were suffering from lassitude and drowsiness. After giving a guarded prognosis, scarifying the gums freely, so as to make them bleed a good deal, I administered, before leaving the house, two grains of hydrargyrum c. cretâ, with one of the resin of scammony. A sinapism was likewise applied over the loins; and I directed that the lower extremities should be fomented with mustard-water. I returned at 4 P.M. The surface was warmer; in other respects, the general character of the symptoms was the same. There had been neither urinary nor alvine evacuations, and the sleep had been heavy and uninterrupted. An enema, containing one drachm of turpentine, was therefore prescribed. At 9 P.M. I found that great improvement had taken place. The mother assured me, that, after the action of the enema, which produced an abundant evacuation of hardened feces, the infant appeared to be quite herself again; was inclined to play, and took some sweetened milk and water, with eagerness and satisfaction. A small quantity of urine had been passed unconsciously before the enema was given; and I was thus disappointed in obtaining any for examination, which is to be regretted, as, in this early congestive stage, it would have been interesting to test it for albumen. I procured, however, the napkin, which exhibited a brownish stain, the margin of the stain being most deeply tinged. Litmus paper applied to the damp napkin was reddened. The quantity of urine voided on the napkin was small. When the enema operated, an additional quantity was passed; but, from being mingled with the faeculent discharge, it could not be examined. The pulse was not more rapid, but it was much stronger, the skin was warmer, and there was a very slight flush in the countenance. The following is a summary of the directions which I gave for managing the case, till my return in the morning. If the head became hot, an evaporating lotion was to be assiduously used; the lower extremities were to be kept wrapt up in blankets wrung out of hot water; and the general covering was to be light,—a single sheet, so long as the surface was warm; every four hours, a small dose (six drops) of the spiritus aetheris nitrici was to be given; and early in the morning a powder of the same composition as that which was administered at the first visit.

17 *June*, 10 A.M. After I left last night, the infant got rapidly into a state of burning fever, which, after continuing for an hour, subsided, a slight and transient moisture appearing at the same time on the head, face, and chest. A small, offensive, and tar-like motion was passed at

9 A.M., the powder having been taken at 6 o'clock. Excepting a small quantity of urine passed at the same time with the motion, none had been passed since the operation of the enema. An aperient powder was given. In the evening I learned that a good deal of urine had been passed unconsciously, and likewise two offensive stools. I was told that about eight the surface became cold, and some slight convulsive movements were observed during sleep, after which a burning fever set in; and out of this state she was passing when I made my visit (10 P.M.) She was now sleeping softly, and perspiring profusely, with the breathing natural, and the pulse 98. The mother reported that there had been less stupor, and that she followed with her eyes all that was done in the room.

18 *June*. During this day, a good deal of urine passed unconsciously; the child slept, with only slight interruptions, all day; the skin was moist, the breathing easy, and the expression of countenance natural. A small quantity of urine was obtained for examination; it was high-coloured and acid. When heated, the supernatant portion became clearer after depositing a white precipitate; on adding nitric acid, and continuing the heat, the greater part, but not all, of this precipitate was dissolved. The quantity was too small to enable me to determine the specific gravity.

19 *June*. If there be any change to-day, it is for the better. The treatment was continued.

20 *June*, 10 A.M. A change, decidedly for the worse, came on during the night, and for the last twelve hours there has been profound coma, and neither alvine nor renal evacuation. The muscles of the face have been a good deal convulsed on several occasions, the fists clenched, the eyes open and upturned, and once there has been an attack of opisthotonos, as before my first visit. I immediately ordered a turpentine enema, similar to that formerly given; and the enema was administered, and the gums were again scarified.

21*st*. From 9 to 11 this morning there seemed to be some slight improvement in the countenance; but there had been hardly any, if any, urine passed. In the afternoon the stupor became very profound; a blister was applied to the head, sinapisms to the loins, a purgative enema administered, and a mixture, containing gamboge, given at intervals. The blister discharged freely; and there was one abundant liquid stool from the gamboge. Again the result of the treatment seemed to be hopeful.

22*nd*. There has been some improvement to-day, and the child has on several occasions recognized her mother, and brothers and sisters; but there was no diminution of the comatose state on the three occasions on which I visited her. Dr. Sibson saw the child at 9 P.M., along with me, when the condition was certainly very different from what had hitherto existed; this, perhaps, might be owing to the circumstance of the infant having taken too much of strong beef-tea during the hours when she had partial consciousness. The countenance was flushed, the head burning hot, and the pulse full, hard, and rapid. These symptoms were speedily abated by leeches to the temples, and the application of ice, for some hours, to the head.

23*rd*. The state to-day has been very similar to that of yesterday,

including the vascular excitement in the evening. The fever was not, however, of so long duration, and passed off in perspiration,—the consequence, apparently, of hot fomentations to the limbs, and the application of cold to the head. After the perspiration, the child seemed very weak, and two doses (of ten drops each) of brandy were administered.

24th. There has been much more prostration to-day, and a persistency of coma. There has been no water passed, excepting towards the afternoon, when a little was seen to flow, perhaps about three or four drachms, which left a stain upon the towel like that of bloody serum. A scanty stool was passed during the night. In the afternoon, about the same hour as on the preceding days, vascular excitement set in strongly. When I saw the child about 10 P.M., the pupils were contracted, the veins in the neck and head turgid, and, every ten minutes, there occurred opisthotonic convulsions, the fists being firmly clenched at the same time. The clenching of the fists was the first indication of the coming opisthotonos. Sometimes the face was distorted, but not always. At midnight I returned, and found matters had been going on from bad to worse; the convulsions were much stronger, almost without intermission, and accompanied by incessant and piercing shrieks. When I left between 12 and 1, I did not suppose that life could have lingered till 5 next morning,—the hour at which the infant expired. The convulsions and the shrieks continued up to the moment of death; and the mother assured me, that, upon some occasions, the violence of the spasms was such, as to bring the head and heels almost into contact.

When I saw the body early in the morning, some hours after death, the surface was purple, and the features much distorted.

SECTIO CADAVERIS, made twenty-six hours after death, on the 25th June, 1849, half-past 6 to 8 A.M., by me and Dr. Alexander Henry.

External Appearance. The anasarcous appearance was evident, though much less marked than during life. Notwithstanding the heat of the weather during the previous day and night, there was no trace of decomposition having commenced. There was slight cadaveric rigidity.

Head. The head was well formed. On removing the scalp, a small portion of the anterior fontanelle was observed to be unossified, and through the membrane in that situation, as well as through the bones themselves, could be seen the great vascular congestion existing below them. In dividing the skull, the bone bled freely; and on removing the upper segment, the dura mater presented a rigid appearance, from the prominence of the distended blood-vessels. The brain, being very soft, was cautiously sliced from above downwards to the roof of the lateral ventricles. The congestion between the hemispheres was very great, and the blood in the vessels of the substance of the brain was unusually abundant and fluid. The right ventricle was enormously distended with clear serous fluid; three and a half drachms were removed and measured, but an additional quantity was lost, from the softness of the brain causing a laceration by which it escaped. The left ventricle also contained an abnormal amount of fluid. The choroid plexus on each side was much gorged. The fourth and fifth ventricles were distended with fluid. The cerebellum was firmer than the cerebrum; and the pons varolii and medulla oblongata were much firmer

than the cerebellum. The vessels of those parts were congested. The amount of subarachnoid effusion was inconsiderable, as compared with that in the ventricles. No clot or extravasation of blood was seen, though carefully looked for. The fluid removed from the ventricle was examined by Dr. A. B. Garrod; he found it to have a specific gravity of 1007·5, and a slightly alkaline reaction.

Chest. There was no effusion into the cavities of the pleurae or pericardium. The viscera of the chest were natural in position and structure. The blood in the heart and vena cava was fluid.

Abdomen. There was no effusion into the peritoneal cavity. The intestines were moderately distended with flatus. The liver was not congested; the gall-bladder contained a moderate quantity of black, thick bile. The spleen was, perhaps, a little more bulky than natural, but it was not softer than usual. Both kidneys were much enlarged; the left was the largest. When cut into, the blood trickled from them: they had a soft feel, and were so pulpy, that, in the hot state of the weather, and with other urgent duties to attend to, it was not possible to reserve them for microscopical examination. Their condition, however, was that of enormous hyperæmia, with, no doubt, ruptured Malphigian tufts. There was no urine in the bladder.

The Blood. Dr. A. B. Garrod very kindly made a careful chemical examination of fluid blood, chiefly removed from the heart, vena cava, and pulmonary artery, with a little also from the sinuses of the dura mater. The whole quantity examined was so small, that he could only procure from it 185 grains of solid matter. He says: "urea was found in it, in greater abundance than in healthy blood. It also contained a larger quantity of uric acid than healthy blood."

REMARKS. The case which has now been detailed is interesting from the apparent absence, in its first stage, of inflammatory symptoms, from the well-marked remittent character maintained throughout by the disease, from the albuminous condition of the urine (as in intermittent fever), and from the superabundance of urea and uric acid found in the blood, by a gentleman whose accuracy in, and familiarity with, such researches, are well known.

Is acute Hydrocephalus always an inflammatory affection? I confess that my own experience has long inclined me to this opinion; and, that the treatment, which this view of the pathology of the disease suggests, is safe in the majority of cases, there can be no question. Leeching, general blood-letting, and active purging, are all most obviously efficient for good in a large number of cases. Still, in the case now narrated, there did not seem to be any propriety in regarding the disease as inflammatory; and, perhaps, in numerous instances in which blood-letting proves useful, the principle of its beneficial operation is the relief which it affords to congestion, just as it proves useful in certain forms and stages of remittent and intermittent fever. The recognition of this principle, if correct, would often be of great service in preventing mere empirical depletion, in regulating the amount of blood which ought to be taken, and in pointing out the exact periods at which it ought to be drawn. In place, then, of answering the question proposed, by an un-

qualified affirmative, it would apparently be more correct in theory, and more useful in practice, to hold that acute Hydrocephalus, *i.e.*, effusion into the arachnoid sac and ventricles, following in a few days, or it may be in a few hours, the first recognisable deviation from health, is a form of dropsy, which may supervene upon the congestive stage of a remittent or intermittent fever, with or without an intermediate inflammatory stage. The irritation of teething, also, intestinal worms, and various diseases of the abdominal viscera, occasion, in many children, severe and alarming head symptoms, depending on cerebral congestion, very prone to terminate in effusion. In each case, the special disorder must be the key to the treatment; and however imperative active measures may be, to avert or remove cerebral mischief, it would be mere empiricism, were we to treat every case as if the head were the primary or principal seat of the disorder. For example, it would often be good practice to combine the disulphate of quinine with calomel, or other medicine which we may exhibit to act on the chylopoietic viscera.

Early change of air might have been of material benefit in the case detailed. In two cases, almost identical in their symptoms, and exactly coincident as to local and atmospheric circumstances, I have, within the last few weeks, had the happiness to witness recovery; and in both, the treatment embraced the steady exhibition of quinine; and, in one instance, along with this, the patient had the benefit of change of air.

It may be well to remark, that for some months past, the majority of cases of all diseases in this neighbourhood have, so far as my experience goes, presented a well-marked tendency to assume the remittent and intermittent types. This has been particularly obvious in the serous diarrhœa, or cholerine, so prevalent and so fatal, as well as in such fully-developed cases of true cholera, as did not terminate too speedily to prevent the whole group of symptoms from being manifested. Being anxious to ascertain whether this interesting character had been recognized by others, I applied to Mr. Whiteman, my neighbour, who, as medical attendant on the poor of this parish, has had, in addition to his private practice, a large experience in cholerine and cholera, within the last few months; and he entirely corroborates what I have stated, as to these affections presenting an unmistakeable relation in the character and sequence of their phenomena to intermittent fever. It will be interesting to learn, whether the same thing has been observed generally throughout the country, or whether it has been more manifest in particular localities. It has certainly been equally obvious in some cases which I have had on the other side of the river, in Fulham.

Essex House, Putney, September 1849.

BIBLIOGRAPHICAL RECORD.

RESEARCHES ON THE DEVELOPMENT, STRUCTURE, AND DISEASES OF THE TEETH. By ALEXANDER NASMYTH. London: 1849.

This work, we are informed, had just been completed before the late Mr. NASMYTH was attacked with the malady which ultimately proved fatal. The delay in publication, thus unavoidably caused, has been unfortunate, as much that was considered new, when the book was written, has ceased to bear the attraction of novelty; and, laborious though the work be, others have been published, which are more complete, and, we may add, more useful. In saying this, we do not wish to detract from the merits of Mr. Nasmyth, but to express our candid opinion of the book before us.

The first and second chapters are devoted to the general physiology of the dental system, and the descriptive anatomy of the mouth and jaws. Chapters third and fourth treat of the descriptive, general, and minute anatomy of the teeth; and the development of the formative organs of the teeth is discussed in the fifth chapter. Then, in succession, we read of the general and minute anatomy of the dental capsule and pulp, the development of the permanent teeth, the teeth as an indication of age, and as an indication of the progressive improvement of the human race. The development of ivory, and the chemical composition of the teeth are treated of at length, and with much detail. In the last chapter, there is some information on the respective qualities of ivory. The first in density is that from Ceylon; and this commands the second price in the market. African ivory holds the next place in density, but the first in value, as possessing the cleanest grain. Ivory from Siam is next heaviest, and after that, ivory from Bombay. The latter is principally used for piano-forte keys, being very opaque, or *dead*, as it is technically called. Cape Coast ivory is the least esteemed of all. Fossil ivory is not alluded to, though it is frequently found in such excellent preservation, as to admit of its being converted into articles of use and ornament. That of Siberia is especially good; and, in the Wernerian Transactions, a gigantic mammoth's tusk is described, which was dug up between Edinburgh and Falkirk, and was sold by the workmen to an ivory-turner in Edinburgh, who sawed it asunder, and converted it into chessmen.

This work bears evidence of much diligent labour on the part of the author: but not less must have been the zeal with which his widow laboured at her part in its publication. There are few ladies who could have discharged so onerous a task, as that of editing such a book, with the accuracy and success with which this has been produced.

DIAGNOSIS AND TREATMENT OF ERUPTIVE DISEASES OF THE SCALP. By J. M. NELIGAN, M.D. Dublin: 1848.

This is an unassuming, entirely practical work, by an author of much experience. DR. NELIGAN is in the habit of employing, as local remedies in Diseases of the Scalp, the carbonates of soda and potash, either in ointments or lotions. The carbonate of potash being most irritating, he prefers it in pityriasis, herpes, and the chronic forms of eczema; but for impetigo, and the acute and recent cases of the other eruptions, he recommends the soda. In the treatment of the inflammatory division of eruptive diseases of the scalp, the alterative medicine used by Dr. Neligan is the yellow iodide of mercury, in combination with hydrargyrum c. creta, and aromatic powder. In all cases, the patient is kept strictly on milk diet, during the whole of the treatment.

THE THREE KINDS OF COD-LIVER OIL, comparatively considered with reference to their Chemical and Therapeutic Properties. By L. J. DE JONGH, M.D., of the Hague. Translated from the German, with an Appendix and Cases, by EDWARD CAREY, M.D. London: 1849.

Some of the most important information contained in the treatise of DR. DE JONGH has already been laid before our readers (March, p. 288); and as the first article of this JOURNAL, by Dr. Williams, contained so elaborate and so thoroughly satisfactory a statement of the therapeutic value of Cod-liver Oil in phthisis, we must simply refer our readers to DR. CAREY'S publication for such additional facts, as they may still desiderate.

We cannot agree with De Jongh in giving a preference to the dark-coloured oil. Many patients are quite unable to take it; and in none of the many instances in which we have given the purest and most tasteless which could be obtained, have we been disappointed in the amount of benefit produced. Since the publication of Dr. Hughes Bennett's treatise in 1841, we have been in the habit of extensively prescribing the oil; and as for a long time we gave preference to the dark-coloured, in consequence of the recommendation of that author, we are now able to speak of both kinds.

This monograph is of great value, and does much credit to Dr. Carey. It contains a considerable amount of information, not to be found in any other work.

THE TREATMENT OF RHEUMATIC DISEASES BY LEMON JUICE; with Illustrative Cases from Hospital Practice. By G. OWEN REES, M.D., F.R.S. London: 1849.

DR. REES has made out, quite satisfactorily, the efficacy of Lemon-juice as a remedy in Rheumatic Diseases. It seems to be one of those remedies which act by eliminating morbid matter by the kidneys; and therefore acts beneficially very much in the same way as the acetate of potash or colchicum. In March last, in a severe case of rheumatic scarlet fever, we saw very marked relief to the pains from the following prescription, which was suggested by Dr. C. J. B. Williams. It was not specially for the rheumatism that the mixture was given; but when it was suspended, the pain became, in a few hours, as severe as before it had been taken. The draughts were given with a considerable excess of the lemon-juice, as they seemed, when so administered, to prove very grateful and soothing. To the citrates of ammonia and soda, and to the free lemon-juice, collectively, we ought, most probably, to ascribe the relief to the rheumatism; and we would be very much inclined to suggest a series of comparative experiments with the lemon-juice alone, and with it along with soda, potash, or ammonia individually. The following is the formula used in the scarlet fever case already referred to:—℞ Sodæ sesquicarb. ʒiss; ammoniæ sesquicarb. ʒss; syr. tolutani, ʒss: aquæ ad ℥viij. M. Sumat cochlearia duo ampla quartis horis c. succi limonis cochleari medio.

CONTRIBUTIONS TO THE PRACTICE OF MEDICINE ON THE REVULSIVE AGENCY OF THE SKIN. By L. F. CRUMMEY, M.R.C.S.E. pp. 91. London: 1849.

We should have been at a loss to conceive what led the author to publish this book, had we not been informed in the preface, that "to the professional reader the author does not suppose that his little work will supply any thing new, save matter for criticism; nor will it offer to the general reader any thing very interesting; but to the invalid, he presumes it will furnish matter for serious and important reflection."

MR. CRUMMEY may not agree with us as to the measure by which this, and the like class of works is to be meted; for in *our* opinion, they are not calculated to elevate their authors in the estimation of their professional brethren.

HEALTHY SKIN; a Treatise on the Management of the Skin and Hair in relation to Health. By ERASMUS WILSON, F.R.S. pp. 238. 1849.

This work, although written for the public, is not a catch-penny affair; but contains information which cannot be too widely disseminated. The subjects treated of in order are, the Skin, the Perspiratory System, the Hair, Diet, Clothing, Exercise, Ablution, and lastly, various Disorders and Affections of the Skin. Being written in a pleasant readable style, the book is likely to fall into numerous hands; and there are, every one knows, thousands who require to be told some of the truths which it aims at inculcating. There is no system, however absurd, from which some good is not to be derived; and though established by an ignorant enthusiast, there can be no question that hydropathy has rendered valuable service, by drawing the attention of the profession and the public to the free use of water. We will take on ourselves to say, that among the higher and middle orders, fifty years ago, not one in six washed more than their faces, hands, and feet, from year's end to year's end. We all know the story of Boswell asking Johnson (whose feet he saw protruding from the bed one dull morning), whether he *usually* slept *in his boots?* and marvellous must have been the accumulation on many skins, of a life's impurities. We believe, we say, that the change which has taken place in this respect, originating in fashion, and continued from its intrinsic value, is of incalculable importance; and that ablution will impart, to those who avail themselves freely of it, increased health and comfort, and will free them from many of the evils which are the offspring of checked perspiration and unhealthy skin.

The observations on Dress, especially on the costume of children, are sensible; and the evils arising from the false notions entertained by many mothers and nurses upon the subject, are forcibly pointed out.

We cannot close this notice without expressing the surprise we felt at meeting with the following passage (the subject under consideration being the sympathy between the nerves of the skin and those of the system generally): "This is the point of view from which must be viewed the death of the soldier at Hounslow, from the effects of military flogging. In him, the cause was neither the cutting of a tooth, nor a burn the size of a hand, but a bruising and laceration of the skin of the back, from the nape of the neck down to the loins: a state, in point of fact, involving the two conditions of an extensively injured surface, and a prolonged painful irritation (the punishment was continued for half-an-hour). After death, the existence of internal convulsions was proved (?) in this man, by the disorganization of his heart, and by the rupture and destruction of several of the muscles of his back" (p. 206). Now, not only does MR. WILSON step out of his course to introduce this, but he assumes as an established fact, that which the evidence of all the other surgeons went to deny. Far from the existence of internal convulsions having been proved by the disorganization of the heart, and the rupture and destruction of the muscles of the back, the bulk of the evidence tended to shew that Mr. Wilson was in error on those points. We cannot, therefore, assent to the position here laid down; and should have thought that the circumstances attending that inquest, and the very unpleasant feeling which it raised in the minds of many professional men, would have prevented the subject being unnecessarily obtruded in a popular book on HEALTHY SKIN.

CRITICAL DIGEST OF THE BRITISH AND FOREIGN MEDICAL JOURNALS.

PRACTICE OF MEDICINE AND PATHOLOGY.

LÉVY AND THOLOZAN ON THE PATHOLOGICAL ANATOMY OF CHOLERA.

M. THOLOZAN, *chef de clinique* in the Hôpital du Val-de-Grâce at Paris, has lately published in the *Gazette Médicale de Paris* (July 21st, and 28th; August 4th, 18th, and 25th; and September 1st), the results of a series of careful observations, made by himself and M. LÉVY, physician to that hospital, on the Pathological Appearances found after death in the bodies of Cholera patients. We translate the article nearly entire.

INTRODUCTORY REMARKS. A disease so complex and so changeable in its phenomena as Cholera, can only be elucidated by the minute appreciation of all its anatomical and pathological elements. It is only on a well-founded and correct knowledge of the pathology, and the morbid anatomy, of Cholera, that we can advantageously found general ideas of its progress in its epidemic visitations, and of their mode of propagation and renewal. All researches, even the most minute, are useful, when their object is to make us acquainted with the modifications undergone by the organism; and only in this way can we arrive at positive notions of the nature of diseases. Clinical observation and pathological anatomy, aided by chemistry and the microscope, will furnish us with the surest lights in observing the nature and evolutions of epidemic diseases, as well as the progress and characters of spasmodic affections. Encouraged by this reflection, M. Lévy and myself have undertaken a series of minute researches on the mechanism of the central circulation, and on the anatomical state of the heart, lungs, and nervous centres. We intend first to point out the modifications in the sounds of the heart in Cholera patients.

SOUNDS OF THE HEART AND VESSELS. 1. *Central Circulation.* Of fourteen algide cases, five were auscultated some minutes before death; in four of these the heart's sounds were dull, prolonged, weak, and obscure; in one case they were only weak, without alteration of *timbre*. There was no irregularity nor intermittence. The nine remaining cases were examined for some hours at least, and some for several days. In five, there was no change in the character or rhythm of the sounds. The *timbre* was heightened, as has been observed a few minutes before death, but generally in a less marked degree. Abnormal murmurs were heard in the four other cases, once with the first sound, three times with the second; and the details of these four cases throw much light on the cause and origin of the abnormal sounds in Cholera. In the first, the systolic sound was a little prolonged, and alternately accompanied with a slight murmur, or simply hoarse, or natural. At the autopsy, we discovered no fibrinous clots, nor alterations of the orifices. The internal surface of the left ventricle was slightly ecchymosed, as is frequent in Cholera. The right cavities were distended with black coagula, of tolerable consistence. In the two following cases, well-marked diastolic murmurs were heard, in one case, for twenty-four hours; in another, during three days. They disappeared as moderate reaction gradually set in, and became intermittent before ceasing. These murmurs were at one time gentle, at another somewhat harsh, with a sensation of *aspiration*. In the last case, the *timbre* of the second sound was changed; it was generally loud, and was, at intervals, accompanied with a slight murmur, at other times harsh, or of a *whining* character. In seven torpid cases, with well-marked reaction, the first sound was, in one case, prolonged into a murmur.

2. *Peripheric Circulation.* In twenty-one cases, the sounds were gentle, weak, sometimes inaudible, in the vessels of the neck, in the algide stage; and normal during torpid reaction. Of thirty-three patients auscultated during convalescence from Cholera, nine had a continuous and redoubled or intermittent vascular murmur. All these observations, except two, were made on patients who had been in an anæmic state before they were attacked with Cholera; and in two cases only the symptoms of Cholera had been well marked; in the others, there had been cholerine, diarrhœa, or simple vertigo. These results differ remarkably from those obtained by M. Bouchut. We did not find in the five cases which we auscultated while death was taking place, the single sound noticed by that observer; the *tictac* of the heart continued till the last expiration, and ceased with it. Neither have we heard the friction sounds mentioned by M. Bouchut; and necroscopic examination confirms our opinion of their non-existence. In 140 subjects examined at the Val-de-Grâce, we found no inflammatory changes in the pericardium. The lesions of the external surface of the heart are situated exclusively in the subserous membrane, and are not of a nature to produce friction sounds. Systolic and diastolic murmurs have been observed by us as well as by M. Bouchut; but we cannot admit his explanation of their occurrence. In seventy-five autopsies, in which we examined with the greatest care the internal membrane of the heart, we found *no congestion of the endocardium with thickening of the valves.* The membranes of the valves, in all cases, preserved their polish and fineness. We must then have recourse to another explanation; and the only probable causes seem to be the encumbrance of the cavities of the heart, especially the right, by the pitchy blood, the formation of black coagula, and, especially, a modification in the force or manner of the contractions of the heart, corresponding with the alterations in the consistence of that viscus which we have met with in a large proportion of cases. Lastly, we do not think there is more tendency to the development of jugular or carotid murmurs, during convalescence from Cholera, than in many other diseases, even in those considered inflammatory, when convalescence has been tedious and difficult. We do not think, from the result of our observations, that the peculiar alteration of the blood in Cholera would have the effect of producing vascular murmurs; they would rather depend on previous modifications of the blood, and would be rarely observed in Cholera, the rapid evolution of which does not exceed twenty or twenty-five days.

These Post-mortem Appearances have been noted in seventy cases; and may be compared with the results of sixty-three autopsies performed in the Hôpital du Val-de-Grâce during the early period of the epidemic, which have been published by M. Masselot.

Pericardium, Endocardium, and Muscular Substance of the Heart. *The almost entire absence of fibrinous nuclei, or plastic concretions* in the cavities of the heart, and the *facility with which the muscular substance loses its cohesion*, are facts which have been almost constantly observed, and which occur with the same frequency, both in the algide and in the torpid stages. The bodies were examined generally six, eight, or ten hours after death; so that some value may be attached to our observations. The other pathological appearances occurred in the following order of frequency.

Thirty-eight algide cases, varying from eight to forty-eight hours.		*Twenty-two torpid cases, or with feeble reaction, varying from three to ten days.*	
Considerable distension of right cavities	27	Sub-serous ecchymoses	18
Sub serous ecchymoses	28	Violet suffusions of left ventricle	16
Violet suffusion of left ventricle	20	Distension of right cavities	16
Yellow serosity in the pericardium (from 10 to 60 grammes)	7	Yellow serosity in pericardium	8
Fluid blood	4	Fluid blood	1

Sanguineous infiltrations of the heart are hence seen to be very frequent,

and to be more marked in the second stage, through the development and continuation of the pathological process which commenced in the first stage. We may here say, that all the lesions,—pulmonary, renal, and especially cerebral,—prove the identity of the nature of Cholera in its two conditions, which at first seem to present such a contrast of symptoms—*algidity* and *reaction*. It is an anatomical demonstration of the truth of a fact insisted on by M. Lévy that *the nature of Cholera is identical in all its periods*.

The blood with which the cavities, especially the right, of the heart, are found distended, is generally in large brown-red and soft clots. The left cavities are rarely completely filled—never distended; and there is always more fluid blood in them than on the right side.

The *ecchymoses of the external surface of the heart* often constituted the only lesion. In 20 of the algide cases, they were confined to the posterior aspect of the heart; in 3 of these they were very numerous—in 17 less abundant. In 7 cases, they were found in great number both on the anterior and posterior surfaces. In the torpid cases, or with feeble reaction, they were confined to the posterior part in 14 cases; in 4 they were more numerous, and were seen on both surfaces. The most constant seats of these ecchymoses are the auriculo-ventricular furrow, the right border, and the interventricular furrow. When found on the anterior surface, they always manifest the same predilection for the vascular furrows, and for the regions of the heart where fatty cellular tissue abounds. They sometimes even are scattered among the parts where the muscular tissue lies immediately under the serous; but even in these cases, they prefer the neighbourhood of the more richly vascular parts, such as the apex of the heart, and the part of the left ventricle nearest its base. At first, they are simple rose-coloured spots in the subserous tissue; but, on increasing in size, assume red, brown-red, or blackish-red tints. Sometimes they only attain the size of a pin; at others, they lose their rounded petechial shape, and form knotty, elongated, and interrupted cords, along the course of the auriculo-ventricular vessels. Most commonly, they are irregularly round extravasations, from 1 to 3 millimetres in diameter. They are not only met with under the serous membrane; but, even in the substance of the adipose tissue, the liquid blood is extravasated into the vessels of the loose and permeable cellular tissue. The large vascular trunks in the vicinity are sometimes distended, generally half filled; the capillaries are generally equally injected on the anterior and posterior surfaces; and more so on the muscular substance than on the fatty tissue. The blue coloured capillaries, which give the heart of Cholera patients a cyanosed appearance, are not the only ones met with. We have many times met with a very fine clear red arborescent injection, with equally filled branches, situated in the serous membrane, in those parts only which are usually occupied in preference by the extravasations. Where these were absent or scanty, the superficial arborisations were most marked. We are led to ascribe great importance to these, as preceding the formation of sanguineous infiltration, the more so as we have observed the sanguineous exudation occupy the substance of the serous membrane.

The seat of the exudations seems to depend on three conditions: *laxity and permeability of the tissues, vicinity of the large vessels*, and *gravitation*. Their cause is more complex. Nothing proves it to be a particular modification of the blood. The stagnation of the blood in the heart, and its reflux into the capillaries, is doubtless a predisposing condition; but why should the almost exclusive seat of the ecchymoses be in the most closely woven portion of the cellular tissue, forming the serous membrane? To explain this, we must bear in mind the vascular injection, which has been already noticed. The ecchymoses of the auriculo-ventricular furrow prevailed on both sides of the vessels, some on the base of the ventricles, the other on that of the auricles. In thirteen cases, they were found on the external face of the auricles, outside the furrow; most commonly they were situated behind, opposite the inter-auricular septum, in the neighbourhood of the openings of the two

venæ cavæ; occasionally some small ecchymoses extended on the auricular appendices. In eleven cases, we found these ecchymoses on the posterior aspect of the ascending aorta; in nine cases they extended, being elongated, swelled, and interrupted, to the posterior surface of the thoracic aorta. They were here of a brown red colour, and seated in the cellular tissue which forms the first coat of the arteries.

The *ecchymoses* or *sanguineous suffusions on the internal surface* of the left ventricle seem worthy of especial notice. In the normal state, the internal surface of this ventricle is paler than that of the right; and also presents, in many cases, violet-coloured striæ, which are more rarely seen in the right ventricle. In Cholera, these striæ are more numerous, scattered, or in juxtaposition; sometimes they are confounded together into insulated patches, giving a clear red, violet, or brown-red tint to the endocardium. Both striæ and suffusions are seated beneath the endocardium. In some of the more strongly marked cases, we have noticed at the same time a destruction of the more superficial muscular fibres; there were here true ecchymoses, slightly raising the endocardium. All these lesions are usually seated on the columnæ carneæ, or on the netted portion of the ventricle. They are more abundant towards the middle of its long diameter, and are absent in the vicinity of the orifices. They are more abundant anteriorly than posteriorly; and the part of the endocardium which corresponds to the inter-ventricular septum is always less affected. The right ventricle sometimes presented violet-coloured striæ in considerable abundance; and, in three cases only, suffusions alone were present. The almost exclusive occurrence of these lesions in the left ventricle cannot be ascribed to its dependent position; for both walls are affected, and the right ventricle is more dependent than the left. The anatomical cause is to be found in the great vascularity of the walls of the left ventricle. On cutting across the hearts of Cholera patients, so as to remove the auricles with the base of the ventricles, the section of the anterior and posterior walls of the left ventricle was of a deeper red colour than that of the septum, and presented brown-red blood points in abundance, which were entirely wanting in the septum and in the right ventricle. The softening, or rather friability of the heart, to which we have before referred, was more marked in the left than in the right ventricle.

The ecchymoses of the heart are not like the scattered and irregularly distributed petechiæ in scarlatina, severe variola, or epidemic meningitis; but they are an anatomical lesion, important for their frequency and invariability of type. How far these are constant in Cholera, can only be determined by future observations, and by combined researches made simultaneously in different places on the same epidemic, and at different periods on different epidemics. At present, we do not hesitate to declare our opinion, that the ecchymoses of the heart should be inscribed in the history of Cholera,—at least in that of the present epidemic.

Lungs and Pleuræ. The following table shows the frequency with which congestions, infiltrations, and hæmorrhages, were found in the lungs in 60 cases:—

Thirty-eight cases, varying in duration from six to forty-eight hours.

Slight congestion of both lungs	6
—— of the lungs posteriorly	2
Marked congestion posteriorly and laterally	12
Serous infiltration	1
—— with loss of cohesion	3
Sub-serous œdema	1
Slight diffused sanguineous infiltration	17
Partial and lobular apoplexy	7
Melanigenous congestion	1
Sub-pleural ecchymoses	10
Pleural and sub-pleural ecchymoses	1
Sanguineous infiltration under pleura	1
Incipient lobular hepatisation	2

Twelve cases with torpid reaction, varying from five to ten days.

Slight congestion	5
Œdema of the upper lobes	1
Slight diffused sanguineous infiltration	6
Sub-pleural ecchymoses	3
Partial apoplexy	1
Red lobular granulations	5
Grey granulations	1

Some cases of weak irritation, varying from three to four days		*Three cases with no reaction, cyanosis and algidity being persistent, lasting 4, 6, & 10 days*	
Congestion posteriorly and inferiorly	7	Congestion	1
Sub-pleural ecchymoses	2	Lobular apoplexy	2
Sanguineous infiltration posteriorly	2	Apoplectic nuclei	1
		Pleural ecchymoses	1
		Sub-pleural ecchymoses	2

These lesions may be grouped in the following order.

38 Algid cases	Simple congestion of the pulmonary tissue	7
	Various sanguineous infiltrations	29
	Sanguineous infiltrations with granulations	2
39 Cases rather torpid, or with feeble or no reaction	Simple congestion	3
	Various sanguineous infiltrations	13
	Infiltrations with granulations	6

Simple congestion was observed in only one-ninth of the cases. In several others, *sanguineous infiltration* was more marked. In more than a third of the cases, the pulmonary lesions were not so strongly marked, but that they might have been overlooked by some observers. In studying the progressive chain of these lesions, we find a crowd of essential, secondary, or accidental phenomena, with special characters, grouped round a single general phenomenon, *congestion*. Previous to the more advanced alterations of the pulmonary tissue, which we have designated *partial or lobular* apoplexy, there are found in all cases, *diffused sanguineous infiltrations*. This is a less severe lesion, inasmuch as the blood is as yet disseminated, and as the portions of the lung have not yet been entirely invaded by the effusions, which destroy its cohesion and anatomical structure, by separating, breaking up, or softening the different elements of the tissue. In a still lower form, the blood is contained in the vessels, which it immoderately distends. This is the phenomena which we designate by the term *congestion* (the first degree of alteration in choleraic lungs).

Certain peculiar well defined characters permit, in a great number of cases, this *congestion* to be distinguished from the phenomena of the same nature, which are produced, in a host of diseases, at the posterior and inferior part of the lungs. The principal distinctive sign of cholerаic pulmonary congestion is derived from the physical properties of the blood which distends the vessels. In typhoid and eruptive fevers, etc., the hyperæmia, arising from the accumulation in the vessels of liquid blood, is always accompanied by sero-sanguineous infiltration. In Cholera, when congestion exists alone, large drops of semi-fluid blood exude on sections of the posterior parts; the tissue yields no serosity on pressure; it crepitates but little, from the absence of air in the vesicles. The pulmonary tissue is very resistant, and has undergone a remarkable condensation: it is difficult to free it from the blood, which is neither infiltrated into the tissues, so as to escape from the orifices of the divided cells, nor does it abound in the large trunks. These yield only, perhaps, a few syrupy drops; and it is difficult to wash the pulmonary tissue, which is thus engorged in its minutest vascular ramifications. Let us remember this first fact. We shall hereafter have to consider two curious anatomical transformations which evidently arise from it. Congestion, when general, mostly affects one lung more than the other; and always predominates at the posterior and inferior portions. These parts present a deep red colour on section. At the anterior and superior part, the cut surface is of a brighter red colour; and the drops of blood which escape here are liquid, and of a clear red; while the posterior parts give a black pitchy blood on section. This difference is constant and remarkable; it bears a relation to the changes in the pulmonary parenchyma, and permits us to appreciate their importance by the variable degree in which the functions of the lung are impeded by the consistence of the blood itself. This simple anatomical observation, which may be verified by examining the lungs in almost all

cases of algide Cholera, lead us to see that so important an alteration of the blood takes place, at least as regards its physical properties, in the capillary circulation. It is in the most minute vessels of the lungs, at the moment when the blood is passing for the purpose of undergoing the respiratory changes, that this characteristic alteration is accomplished. When hæmatosis goes on to the last moment, fluid red blood escapes from the vessels; but when this process is very probably impeded, where the pulmonary tissue no longer crepitates, the blood has that pitchy, syrupy aspect, which is most met with in other diseases where, notwithstanding, respiration is impeded, as in pulmonary affections, etc. It may be objected that the blood is primitively altered in its entire mass. But why then does syrupy blood always exude from the congested portions, but clear and liquid blood from the other parts of organs, not only in the lungs, but even in all the other parts of the capillary system, where hæmatosis is infinitely less active? To admit a previous change of the blood, would be to accept as a premiss an illegitimate and improbable hypothesis. In the great central vascular trunks, no physical or chemical change takes place. The cyanosis of the skin of Cholera patients is only a *repetition*, on another respiratory surface, of the phenomenon which is going on in the lungs. In using the word *repetition*, we would not have it to be inferred that the cutaneous cyanosis is consecutive or subordinate to the pulmonary congestion. At the same time with, and even before, the engorgement of the capillaries of the lung, the obstruction of the vascular network of the skin takes place, expressing, under different units, the different phases and multiple modifications of a general phenomenon, which can be nowhere so well analyzed as in the loose vascular network of the lung. Pulmonary cyanosis was neglected in 1832; but from the appearance of Cholera in 1849 up to the present time, has been made the subject of the most attentive researches.

Next in order of morbid development to pulmonary congestion is *diffused sanguineous infiltration*, being the second degree of alteration in choleraic lungs. It is constantly allied, in a certain degree, to congestion, but does not always require for its development an extreme turgescence of the vessels. It is generally found in the posterior and inferior portions of the lungs. The blood there extravasated exuded on pressure, sometimes fluid, and without any of the characters of Cholera blood, sometimes semi-fluid and pitchy. The hæmorrhagic effusions are generally just under the pleura, at a depth of from 2 millimètres to 1 centimètre; they appear through the transparent serous membrane as large diffused ecchymoses situated under that membrane; in some rare cases they are accompanied with sub-serous extravasations; more rarely, they are met with in the centre of the lung. We have never seen them exactly limited to certain lobules. In the most marked cases, the infiltration is of a deep wine or blackish-red-colour: the lung is completely soaked with blood in the greater part of its extent, sometimes in the two posterior thirds of the lower lobes, and, in some cases, even in the posterior half of the upper lobes. On pressure, thick, brown-red, scarcely aerated blood is forced out; and, on pressing more forcibly, the fingers easily penetrate the softened spongy tissue. By moderate pressure, the lung is freed, with difficulty, from the blood with which it is loaded; and it may then be found that the organ has not lost its cellular texture, and that the tissue is not yet ruptured. But even though there be no destruction of the parenchyma, there are, at least, in *apoplexy by infiltration*, lesions of such a character, that the lung can only recover its functions with difficulty, and at the cost of a series of pathological modifications; if, indeed, a patient suffering from such a lesion, which would infallibly cause death in any case, could be expected to survive, when he is also under the lethal influence of Cholera. The lesions are sometimes, though less extensive, more advanced; the pulmonary tissue is not only soaked with blood, but destroyed. These cases of apoplexy are pretty rare; but we have noticed several cases, which will be

found mentioned in the table as *partial and lobular apoplexy*, forming the third degree of alteration. This state is seldom accompanied with well-marked diffuse infiltration: it would seem as if the hæmorrhagic effort is more powerful in isolated spots than over a greater extent of surface. We have never met with apoplectic nuclei of large size. In the autopsies performed by M. Masselot, this fact was recognized in a large number of cases. We have found two varieties, which may be only differences in degree of these partial apoplexies. In five cases, we have met with completely indurated nuclei, projecting from the cut surface, of a glossy coal-black colour, and from one to two centimètres in diameter. A little brown-red blood could be extracted from them on pressure, and the tissue was broken up. They were never accompanied by granular transformation. In five cases, the meshes of the pulmonary parenchyma were broken, and the blood could be washed out. The vessels and weakened cellular partitions could then be seen at the bottom of the cavity hollowed out by the hæmorrhage. The mechanism of these infiltrations seems neither to depend on congestion, nor on the dependent position. We know that there is in Cholera a gradual and regular diminution of the central circulating impulse; during a certain time, there is even a complete arrest of the circulation from the centre to the periphery. It is not at all through the influence of the central circulating organ that these infiltrations can take place; and we must, then, admit an entirely special action in the capillary system. We have already seen that it is in this system that the blood undergoes that modification, and acquires that viscosity which, apart from all other influence on the tissues, renders it unfit for circulation. In the lungs, as in the heart, mucous membranes, and skin, and probably in all organs, sanguineous infiltration is dependent on some peculiar unknown conditions of the capillary circulation. By appreciating all the modifications of this circulation in the lungs of Cholera patients, if we do not resolve the problem, we see it in every point of view.

Serous infiltration was met with in eight cases. In six, it was accompanied with slight sanguineous infiltration, and a sanguinolent serosity streamed from the different sections of the lung. In two cases, the infiltration was purely serous, giving rise to pulmonary œdema; in one of these, the accumulation of serosity was so great as to raise the pleura, and separate it from the lung to the extent of two or three millimètres. The œdema of the lungs was always accompanied with more or less congestion of the inferior portions. In the points where it was most marked, we sometimes found nuclei, where the pulmonary tissue, being washed by the serosity, was white and transparent; like adematous cellular tissue, without any trace of injection, while other lobules in the immediate vicinity were congested or infiltrated.

Melanigenous congestion was met with in four of the cases where the serous infiltration was most marked. We have, at least ten times, met with nuclei, sometimes of large size, wherein the substance was white or rusty grey; and with these we have sometimes found *black-coloured spots*. We cannot forbear recognizing the complete identity in colour and appearance between this matter and the common melanosis of the lungs; and we might take them for physiological varieties, if the melanosis were disposed in nuclei or striæ in the usual conditions, and were not diffused, sometimes presenting the rusty tints of which we have spoken. It is rather a pathological phenomenon; and this is proved by anatomical examination. On gently scraping with the scalpel, blood and serosity were made to exude; and on scraping them again after washing, a considerably injected vascular network was found, of a dark indigo colour in the large trunks, but coal-black in the capillaries. These were very numerous and arborescent, pervaded the whole surface of the section, and produced by their confluence the general melanic tint. Melanotic formations are, in our opinion, due to an unknown modification of the blood contained in the capillaries, which, as we have long observed in the intestinal ulcerations in typhoid fever, seems to be constantly accompanied by œdema of the tissues

in which the vessels are thus engorged, and almost completely obliterated. The rapidity of their formation is not more extraordinary than that of pus in epidemic meningitis, in puerperal fever, or in ophthalmia in armies; or than the early occurrence of albuminuria in an attack of Cholera.

Granular inflammation was met with in eight cases. It was in the second stage (red lobular hepatisation) in two algide cases, one after twenty-four, the other after forty-eight hours. In five cases of the period of torpidity, it was in the same stage; and in one, it was in the third degree (grey lobular hepatisation). It is of importance to decide how far these lesions, evidently inflammatory, are connected with Cholera; for if the primitive lesions in Cholera, which we have described, can give rise to pneumonia, this is another fact to be added to the history of choleraic lesions. The two cases where red hepatisation was met with in the algide stage, give only a negative solution to the question. In these two cases, in fact, the pulmonary inflammation was coincident with the algide period of Cholera, and developed itself at the same time with the primary choleraic lesions of the lungs, being neither subsequent to, nor dependent on them. Being of small extent, and reaction being absent, it silently pursued its course, during the torpid period, and arrived at the state of hepatisation just as it would have done in ordinary cases. We must then admit that the pneumonia may have existed before the Cholera. If pneumonia were met with in Cholera patients only as a sequel of sanguineous engorgements or infiltrations of the lung, and if its relation with these states were established by anatomy, there would be reason for considering the six cases met with during the torpid stage as reactional pneumonia. But the relations, which the symptoms appeared to indicate in some cases, and which were perceived in the autopsies made during the early period of the epidemic, do not appear to us striking: and, at whatever conclusion we arrive as to the pneumonia of Cholera patients, we must set aside the two algide cases above-mentioned, as examples of coincidence, not of reactional sequence nor of complication. Independently of the choleraic congestion and infiltration, these two cases of hepatisation tend to confirm one of the most curious properties of epidemic diseases—their aptitude to attack subjects affected with other diseases, either commencing, or even in a state of incubation. A still more remarkable fact is that, in one case, in spite of the development of the choleraic phenomena, the pneumonia proceeded to the third degree. It is true that we had to deal with a subject in the stage of torpid reaction, a state of the economy singularly favourable to the development of already existing inflammation.

The *Pleura* will not afford us many new remarks: we have mentioned the ecchymoses of which it is pretty frequently the seat. These sanguineous effusions are round, from 1 to 3 millimètres in diameter, and are seated in the sub-serous tissue. The pleural ecchymoses, small and rose-coloured at first, gradually become more voluminous and of a brown red; they are always situated at the posterior and inferior parts of the lungs, either in the sub-serous tissue, or in the substance of the serous membrane, and, in the rare cases referred to in the table, on its surface. A very fine cellular lamina then envelopes the effused mass. There is no pseudo-membrane. These effusions are most commonly accompanied with sub-serous ecchymoses. In one case, we met with a true sanguineous effusion, of the dimension of 2 centimètres, joined to the serous membrane, and adhering pretty firmly, by the aid of a very fine cellular tissue, without any trace of plasma.

Our researches on the anatomical lesions of the lungs lead to the conclusions that the following changes take place:—Various and numerous disturbances, with simple obstruction of the capillary circulation; total arrest of that circulation; extravasation of blood; and complete alteration of the physical properties of that liquid in the most minute capillaries. The nature of the modification which the blood here undergoes is unknown; but we may say, that it results from a combined action of the living solids and fluids. This

consideration tends to banish completely from our thoughts any theory tending to establish the relation of cause and effect between the intestinal excretions and the changes in the blood. To admit such an idea, it would be necessary not only to demonstrate that the chemical composition of cholera blood is explicable by the intestinal excretions, which are so abundant in some cases, while they are almost absent in a certain number of others, but to shew that the same change does not take place in the other capillaries of the system. The theory is indeed very attractive, that all the other morbid phenomena in Cholera are consecutive on the abundant vomitings and stools; but who has been able to study, in their origin, all the symptoms of a disease so little known, or to follow their development so as to shew their dependence on each other? Chemistry fails in proving it; anatomy, as we have seen, is opposed to it; and symptomatology positively demonstrates its inexactitude, by shewing that, in the great majority of cases, the patients have experienced, previous to the appearance of any symptoms in the digestive canal, well-marked modifications of innervation—vertigo, noises in the ears, affections of the sight, prostration, depression, sometimes even cramps. The examination of the alterations of the mucous membrane of the intestinal canal will still less tend to support the opinion which we oppose.

Bronchi, Trachea, Larynx. In fourteen out of fifteen algide cases, we found the follicles at the bifurcation of the trachea more or less developed: in one case, they were scarcely visible; in four cases, they were pretty large, whitish, and abundant; in two only were they found prolonged into the third divisions of the bronchi; in six, into the second; and in six they were confined to the primary divisions. They are usually round, scarcely projecting, of the size of the head of a needle, and slightly pearly: in one case they were quite transparent, and in another slightly flattened: in several cases, they were completely raised in passing the blade of a scalpel over the mucous membrane, and might almost be thought not to have belonged to it. In at least one half of the cases, the larger bronchi presented considerable vascular injection, while the mucous membrane of the smaller tubes was scarcely injected, until they approached the most affected parts of the lungs. In two cases, the bronchi were of a wine-red colour at their origin; once we met with brown-red scattered ecchymoses in points in the middle divisions, the tissue being but little injected. The ordinary secretion was always more or less increased; in four cases the mucus was abundant, thready, and translucent; in two, it was slightly opaque; in one, it was mixed with much air, forming a whitish froth. In six torpid cases, the follicles at the origin of the bronchi projected slightly in three; in two, a whitish froth existed in the tubes. The mucous membrane was, in one case, whitish or greyish at the bifurcation, as if it had been macerated.

Out of ten algide cases, the follicles of the *trachea* were abundant and whitish in five; very small in two; small and translucent in one; flattened in one; and in one only they were absent. In the latter case, the trachea was strongly injected. In four cases there was a deep red injection; in three it was bright red, twice scarcely pronounced, once absent. The follicles, as well as the vascular injection, were always more strongly marked at the lower than at the upper part of the trachea. In two cases we found the trachea pale superiorly, and blackish at the inferior and posterior part. We remember also having since then met with this blackish appearance of the posterior part of the larynx in a pretty large number of cases: it depends on the alteration and infiltration of the blood contained in the vessels between the rings, a phenomena analogous to that which frequently occurs in the great vessels of the cul-de-sac of the stomach, giving rise to lividity. In six torpid cases, the trachea was once found pale, once strongly injected; in three only of these cases, there were slightly projecting follicles in the neighbourhood of the bifurcation.

The *larynx* was pale in eight out of ten algide cases, and presented, in

two, flattened follicles above, below, and between the vocal chords. The same appearance was seen once on the posterior aspect of the epiglottis, and once between this organ and the larynx. No remarkable alteration was observed in the torpid cases.

The summary of these observations is as follows:—The mucous membrane of the air-tubes presents, in almost all the algide cases, an abundant follicular eruption, most frequently accompanied by a notable injection. The points where this transient eruption continues most in the torpid stage, are the lower part of the trachea and the origin of the bronchi, where also the injection is more marked in Cholera, as well as in most other affections. The hyperæmia is always more marked in the posterior half of the tracheal tube, while the eruption is equally abundant anteriorly and posteriorly.

Tongue, Pharynx, Œsophagus. The follicles at the base of the tongue, are, in Cholera, the seat of well-marked swelling. They form a rounded and somewhat flattened projection, depressed and perforated at the centre, from which may be squeezed sometimes an entirely liquid opaline matter, sometimes a whitish semi-consistent substance, which takes a spiral form. In ten algide cases, these follicles were more or less tumified; in four, the tonsils presented a similar appearance, and yielded the same kind of liquid; in three, there was considerable vascular repletion at the base of the tongue, and round the tonsils as far as the pharynx. The trunks thus injected had an indigo or brown-red tint. In six torpid cases, we twice met with no tumefaction of the follicles at the base of the tongue; in two, it existed in a slight degree; in one, it was accompanied with a pultaceous exudation from the tonsils; and in another, with œdema of the arytæno-epiglottic folds, and of the ventricles of the larynx. In the two latter cases, a very intense red-brown vascular injection was observed, and seemed connected, on the one hand, with the submucous œdema, and, on the other, with the pultaceous formation, and probably also with the alteration in the secretion of the follicles and tonsils, which was, in these cases, semi-liquid, of the consistence and appearance of phlegmonous pus. The other portions of the buccal mucous membrane presented nothing remarkable; the tongue, however, was often increased in size, and its papillary and follicular system was in a state of turgescence.

The mucous membrane of the *pharynx* presented follicles, either isolated, or agglomerated into the form of small slightly projecting angular patches, from two to four millimètres in diameter, situated most commonly in the lateral grooves, behind the arytænoid cartilages.

In the *œsophagus*, the follicles were more abundant in the two upper thirds in 6 out of 15 algide cases; in 2 they were more evident inferiorly; in 2 they were scattered; in 1 fixed; in 2 projecting; and in 2 entirely absent. In 1 case, the mucous membrane was infiltrated with blood at the lower part; in 2, it presented spots of ecchymoses; in 3 cases, we observed ecchymoses in the loose cellular tissue at the posterior part of the canal. In the torpid cases, the eruption was met with only three times out of six; and in two of these, was more marked above than below.

In three cases of scarlatina observed during the epidemic of Cholera, the follicles at the base of the tongue and the tonsils were tumefied in a remarkable manner; and a yellowish purulent-looking matter could be pressed out from their excretory orifices.

Stomach, Duodenum, Jejunum, Ileum, Large Intestines. The gastro-intestinal mucous membrane, considered as the principal seat of Cholera by most of the observers in 1832, presented well marked and important alterations. We can now, perhaps, explain them more exactly than before, because the actual spirit of observation in medicine is more disengaged from systematic ideas, and freed from the trammels of an exclusive theory. Here, as in the instances already given, we purpose carefully distinguishing the morbid alterations of the algide from those of the torpid or consecutive period, leaving for

future consideration the facts relating to the intestinal fluid, to the weight of the intestines, state of the peritoneum, etc. The condition of the gastro-intestinal mucous membrane in 38 *algide cases* is thus exhibited:—

Stomach.	CASES
Pale	3
Slate-coloured, blackish grey, etc., sanguineous congestion at cul-de-sac	15
Rosestint	5
Ecchymotic spots	8
Cadaveric softening of the dependent parts	8
Cardiac and pyloric psorentery	10
Psorentery at the two curvatures	1
——— at the pylorus	10
Duodenum.	
Black melanotic spots of the villosities	6
Brown red spots	8
Psorentery	10
Jejunum.	
Pale	6
Rosestint	3
Thick arborisations	4
Fine ditto	7
Scattered psorentery	10
Fine ditto	8
Psorentery confined to inferior part	3
——— more marked superiorly	4
Patches	5
Granular patches	4
Jejunum continued.	CASES
Maceration of upper fourth	1
General maceration	1
Ileum.	
Pale	2
Fine arborisation	15
Rusty coloured suffusion	2
Psorentery confined to the valvules	5
——— at first rare	9
——— general	20
Greyish slightly projecting patches	18
Rose coloured patches	4
Red patches	4
Maceration	1
Large Intestines.	
Pale	7
Partial arborisation	5
Fine arborisation	6
Brown red local sanguineous infiltration, with or without erosion	5
Softening of the cæcum	3
General softening of the mucous membrane	1
Psorentery, with blackish orifices	12
White psorentery	7

In 12 *torpid* cases the following appearances were observed.

Stomach.	
Sanguineous congestion	1
Brown red spots	9
Cadaveric softening	1
Psorentery	8
Duodenum.	
Brown red spots	3
Psorentery	1
Jejunum.	
Pale	1
Arborisations	2
Greenish and yellowish	2
Psorentery	3
Ileum.	
Fine arborisations	3
Psorentery at lower fourth	9
Scattered psorentery	3
Patches	3
Rosaceous psorentery at points	3
Large Intestines.	
Arborisations	5
Psorentery	6
Rosaceous psorentery	1
Ulcers	1
Softening of the cæcum	1
Cæcum red, with venous congestion	1

Seven cases with *feeble reaction.*

Stomach.	
Sanguineous congestion	2
Ecchymotic spots	5
Pyloric psorentery	4
Duodenum.	
Deep red spots	1
Jejunum.	
Pale	6
Fine arborisations	2
Maceration of upper fifth	1
Scattered psorentery	2
Ileum.	
Pale	2
Fine arborisations in scattered places	3
Psorentery (slate-like)	5
Fine psorentery	2
Rosaceous psorentery inferiorly	1
Greyish patches	1
Rosaceous patches	1
Large Intestines.	
Pale	2
Arborisations	1
Slight psorentery	1
Rosaceous psorentery of lower third	1

Three cases with no reaction.

Stomach.	
Brown red spots	1
Greyish	

Duodenum. Nothing remarkable.

Jejunum.	CASES
Fine arborisations	1
Greyish patches	1
Rosaceous patches	4
Psorentery	2
Maceration at end of first half	1
Ileum.	
Fine arborisations	1
Psorentery	2
Patches	2
Ileum continued.	CASES
Psorentery confined to valvule	1
Large Intestines.	
Fine arborisations	1
Sanguineous suffusion, with ulceration of the lower fourth	1
Sanguineous suffusion, with ulceration of upper third	1
Psorentery	1

It is remarkable, how rapidly the follicular eruption appears at the commencement of the jejunum, and there attains its maximum of development, and with what facility it disappears with reaction, or even without reaction, after the second or third day. Much stress has been laid on the swelling of the solitary glands of the small intestine: it has been thought that all the Cholera fluid was poured out by these organs. Whatever may be the number of glands thus tumefied, the alterations which they undergo in Cholera is nothing in comparison with that of which the mucous membrane is the seat in some cases. The almost exclusive attention which has been paid to the development of the solitary glands, has tended to throw into the shade the other alterations of texture; indeed, we did not notice the latter during the early period of the epidemic.

In examining the creamy whitish matter, which may be obtained by scraping the intestinal mucous membrane, we have been several times struck with the appearance presented by the commencement of the jejunum. In five cases, it presented the appearance which we have termed maceration, viz., complete absence of the vascular striæ throughout the entire wall of the intestine; the mucous membrane having the aspect and consistence of having been macerated for some days in water or alcohol; and being easily detached, by scraping, in large shreds. Its colour was sometimes that of a dead leaf, sometimes greyish yellow or white. Close to these portions were observed loops of intestine having the normal aspect and texture; they were rosaceous and finely injected. This alteration was especially observed at the commencement of the jejunum; sometimes also in the duodenum; and although our observations have been too limited to allow us to form a decided opinion, we are inclined to think it connected with the obstinate vomitings which occur during reaction. Horner has described, in the *American Journal of Medical Science*, for August 1835, an alteration in the mucous membrane of Cholera patients, in which the superficial layer of the membrane is raised, and the superficial venous network is brought into view. He represents also, in a curious plate, a portion of intestine in which the mucous membrane is half raised and detached. These cases are probably very rare; but seem to have a relation to the lesion we have described. With this special lesion we would associate the softening (in a great measure cadaveric) of the dependent portion of the cul-de-sac of the stomach; the softening, with thinning, of the mucous membrane of the cæcum, which we have several times raised in the form of a thin gelatinous layer; and a similar alteration which we once found in the whole extent of the colon.

We have given the name *of psorentery* of the stomach to the appearance of small oval friable and whitish bodies, of the size of a pin's head, situated especially round the orifices, and along the small curvature. In the duodenum and upper third of the jejunum, the follicles are generally larger and more projecting, rarely opaline; they are surrounded by villosities, bathed and soaked with Cholera fluid. In the lower part of the jejunum, and in the ileum, the psorentery is whitish or pearly. Sometimes the number of follicles could be counted; at other times, among the larger ones, were observed an innumerable scattering of small follicles, scarcely raising the mucous membrane. Psorentery is met with in other diseases than Cholera, as in cerebro-spinal meningitis and scarlatina; but not in such a marked proportion, and

the Cholera fluid is wanting. The size of the glandules, and their confluence at the upper part of the small intestines, are characteristic in Cholera.

Whether the Cholera fluid be a secretion, or a simple transudation, or both, we are unable to decide. On the complete modifications of the sudden perversions which the ordinary secretory phenomena undergo, physiology and anatomy have to this day remained mute, and it would be useless to build hypotheses. To the epidemist, these facts bear a relation to equally inexplicable phenomena, which seem to reverse the ordinary laws of physiology and pathology. We refer to the almost sudden and abundant production of pus in some cases of epidemic cerebro-spinal meningitis, in puerperal peritonitis, in the ophthalmia of armies, without previous inflammation, and even sometimes without visible injection, and to the profound and rapidly mortal lesions in dysentery, carbuncle, and other epidemic affections.

The exclusive study of anatomical lesions, however complete it may be, does not necessarily explain the value of the changes which take place in the organic action of the tissues. One phenomenon, however, which is at least concomitant, if not initial, is pointed out to us by anatomy and induction: it is the afflux of blood towards the tissues, which pour out from their surfaces a torrent of morbid matter; it is the determination to the surface of, and even into the substance of, the membranes, of a large quantity of blood. The minute injection of the intestines, in some cases, sufficiently points out this congestion; but in the absence of this, and to explain, at the same time, the intestinal secretions and the alternations of paleness and injection of the mucous membrane, we would call to mind the phenomena presented by the skin. The cutaneous cyanosis, in its numerous variations, shews us, better than any reasoning could do, the state of the intestinal mucous membrane during life, and explains fully its diversified appearances after death. It is from this, that in a great measure, doubtless, are derived the different morbid actions which take place in the skin, presenting the greatest analogy with those of the intestines. Along with the cyanosis there is, in fact, augmentation and perversion of the cutaneous secretions; there is also tumefaction of the follicles; there is a clammy, pasty state of the skin. In some cases, we have even observed on the hands, fore-arms, and under the clavicles, large surfaces where the skin was entirely *macerated*, being generally white, pale, and shrivelled. The epidermis was irregularly thickened; and, in some cases, translucid sudamina were noticed. This was more generally met with in favourable, than in fatal, cases. The altered skin regained its normal characters, after the recovery of the patient.

Mesenteric Ganglia. In the algide cases, these were sixteen times slightly tumefied; twelve times they were softened and enlarged; and in ten cases their condition was not observed. In the twenty-two cases with or without reaction, they were slightly increased in eight; softened and tumefied in six; and in eight their state was not examined. We found no alteration in these organs in fat subjects, whose mesentery was loaded with adipose matter. In almost a third of the cases, the softened and tumefied glands were yellowish throughout; in the other cases, they presented a mixture of brownish and yellowish portions. The injection was sometimes in the centre, sometimes at the periphery. In the most marked cases, they were only doubled in size, and their tissue yielded on pressure a yellowish or whitish semiliquid matter. These lesions are, on the whole, but little marked; these glands never present the degree of size and softening which they do in typhoid fever; and every thing tends to shew, that the alterations we have described are but secondary.

Spleen. The remarks we have just made, may also be applied to the spleen, which bears a great functional analogy to the mesenteric ganglia; and which, in many diseases, as in typhoid fevers, exhibits a parallel series of alterations. In twenty-four of the thirty-eight algide cases, the spleen was

notably enlarged; and in seventeen of these, it was somewhat softened; in six, there were brown-red ecchymotic spots scattered through it, and in three there were apoplectic clots. In the twenty-two cases of longer duration, it was seven times increased in size, eight times simply softened, and five times ecchymosed in the interior, in different cases. The increase was, in most cases, confined to an augmentation of its size by one-half, but sometimes it was doubled. Softening was rarely well marked; the colour was almost always reddish. The spleen also presented, in at least one-third of the cases, adhesions at its convex surface, with cartilaginous transformation, or thickening of the capsule. This membrane was also flabby and shrivelled in most of the cases, with augmentation of volume; this, as well as its reddish tint and flattened form, totally excludes the idea of turgescence of this organ. The ecchymotic spots were mostly confined to separate portions, anteriorly as often as posteriorly. The apoplectic nuclei were generally situated in the vicinity of the capsule, and sometimes could be seen through it; they were of a red-brown colour, hard, compact, few in number, varying from the size of a hazel-nut to that of a pea. Sometimes they were gradually lost in the neighbouring tissues; at other times, their limits were abruptly defined. At first sight, one would say, from the density and increased resistance of the tissue, that there was a change of long standing. In one case, a spleen, 12 centimètres in length by 7 in breadth, presented from fifteen to twenty apoplectic nuclei; in the same case, a group of small brown-red ecchymoses, from 1 to 2 millimètres in diameter, were seen towards the middle of the concave surface.

It will be observed, that we consider those lesions peculiar to Cholera, which, although very rarely present, have a common origin with those which are frequently observed in other organs. We shall soon see how important it is especially to take into consideration the sanguineous infiltrations, ecchymoses, and apoplexies, since they are produced in the nervous centres as well as in the lungs, liver, and loose areolar structure of the spleen. We will here only remark, that in no organ can the coincidence of these hyperæmic conditions with the absence of all general congestion, be better observed than in the spleen.

Liver. The liver is congested in different degrees in so many diseases, and the alterations presented by this organ are involved in so much obscurity, that it is difficult to determine what relation the lesions we are about to describe bear to Cholera. In thirty-eight algide cases, the liver was notably congested twenty-five times; softened throughout, four times; and nine times, it presented brown-red spots like ecchymoses. In twenty-two cases with or without reaction, it was congested fourteen times, and softened, four times. In all these cases, the lesions were most marked at the right side and behind, and in almost all the cases there was evident injection and softening in this region; the brown-red spots were there more extensive and more confluent. We met with, in three cases, apoplectic lobules of a centimètre in extent, of a deep red colour, never exceeding two or three in number, situated at the surface of the liver, and penetrating into its substance. The hepatic tissue was friable at this point, disappeared under the slightest pressure, and exposed a rounded cavity with shaggy walls. With this alteration, the brown-red spots have a close connexion. In many cases there were, on the convex, and sometimes on the concave aspect of the liver, brown-red arborisations, with large and short branches, forming, with the non-injected spaces included between their anastomoses, a tolerably regular appearance of mosaic work. In some cases, almost all the convex surface had this appearance; in twelve out of sixty cases, these almost ecchymotic arborescences were disposed in bands parallel with the ribs, corresponding to the intercostal spaces, while the parts opposite to the ribs were pale or less injected. In the nine cases with brown red spots, these injections, instead of being connected

by anastomoses, were in large isolated grains. We often found, at the same time, vessels arranged in a radiated manner, with numerous striæ. Within the hepatic tissue the same anatomical appearances were seen, but less distinctly than beneath the capsule. In ten out of sixty cases, the peritoneum on the convex surface presented traces of old inflammation; in three, there were cartilaginous patches; in two, there were nearly general adhesions with the diaphragm; and in five, the serous membrane was whitish, being either smooth, deprived of its polish, or covered with a cellular network. In all these cases, the tissue of the liver was little injected, yellowish, and very dense. The surface of the different sections of the tissue was usually yellowish or scarcely coloured towards the left, but uniformly reddish, or of a wine-red colour in other parts of the organ. The large vessels yielded, on pressure, reddish or deep red blood; always fluid; the blood was semifluid, and of a brown-red colour only in those parts where the isolated or arborescent dotting of which we have spoken was almost confluent. In three out of seventy-five autopsies we found the peritoneum raised like a phlyctena, by reddish fluid blood.

On comparing the lesions found in the liver with those found in the lungs, we are struck with the different intensity which they present. Of these two important capillary systems, the one supplied by blood which has already furnished the intestinal exhalations and secretions, the other by that which returns from the whole system, where the loss of the water and other constituents is not well pronounced, and often not even perceptible,—it is the latter which presents the most marked changes of the blood, in connection with far-advanced lesions of tissue. How can this fact be reconciled with the opinion of those who pretend that the modification of the blood is the result of the intestinal evacuations? How can we understand, by this hypothesis, the reason why the blood of the portal vein and of the liver, which ought to undergo the first and most extensive alteration, exhibits it in a less degree, at least as regards its physical properties, than that found in the lungs, heart, and large vessels? These questions can only be decided by a comparative analysis of blood obtained from these different tissues. We do not attempt to give an opinion here; but will content ourselves with proposing the problems, and pointing out another difficulty in the delicate and still contested question of the pathological evolution of Cholera.

Icterus has been found associated with Cholera in a large number of cases; and it evidently bears a relation to the hepatic congestion of which we have been speaking. And an equally true and ingenious clinical interpretation leads us to consider it as a critical phenomenon. All the jaundiced cases have recovered; and M. Lévy has laid it down as an axiom, that in Cholera the patient recovers who becomes yellow. The repletion of the capillaries by simple engorgement, which, if permanent, is sufficient to abolish life by arresting everywhere the organic functions, explains perfectly, why, when it ceases rapidly, there is that abrupt return to health, which often occurs in Cholera. These sudden transitions from health to disease, and also from disease to health, can only take place where the structure of the organs has undergone no considerable change: and in this respect Cholera furnishes most useful instruction. In this affection, more than in any other, we see the restoration to health accompanied by the most decided critical phenomena. We have just mentioned icterus, the occurrence of which is no doubt intimately connected with the re-establishment of the capillary circulation of the liver; we would at the same time call to mind the crises by diaphoresis, or diuresis, which recognize an analogous origin; as they all coincide with the gradual restoration of the circulation in the congested and obstructed capillaries.

Kidneys. These organs were highly congested in 25 of the algide cases, and in 16 of the others; in 3 they presented, in the torpid period, an in-

crease in size, with yellowness, of the cortical substance. The calices and pelvis were injected in nearly all the cases; rarely ecchymosed. The tubular and mammillary substance was of a brown red, almost blackish colour, especially in the torpid cases; and yielded from the extremities of the cones, a yellowish or whitish, mucous, sometimes quasi-purulent matter. This semi-liquid substance was found in the calices, pelvis, ureters, and bladder, of different degrees of consistence and appearance. In five or six cases at least, during the period of reaction, we pressed out from the mammillæ, along with this perverted urinary matter, some very fine yellowish oily drops, which floated on the surface of the liquid. With regard to the congestion of the cortical substance, we have observed, in the algide, and sometimes even in the torpid stage, no very remarkable increase of size, but generally a slight diminution of consistence. Within the capsule, especially on the posterior surface, are seen numerous blackish red arborescences; sometimes entire portions are of a slate-blue or indigo-black colour. On cutting the cortical substance parallel to its surface, it presents a very abundant dotting of large grains, from which blood can be squeezed. The perpendicular sections present large parallel vascular lines, approaching each other from without inwards, with transverse striæ. The numerous open mouths of the vessels between the cortical and tubular substance yielded black thick blood. Are these alterations the cause of the cessation of the secretion of urine? We think so, on account of the obstruction and stagnation of blood in the capillaries. The same cause entirely or partly accounts for the presence of albumen in the urine, a phenomenon which may also occur in numerous cases under the influence of slight congestions.

Another very important change, with which we have rarely met, is the increase of size, with yellowish transformation of the cortical substance. In a torpid case, of six days' duration, where this lesion was well marked, the kidneys presented, at the surface, very fine stellated arborisations, with ecchymotic dotting on a clear yellow ground. On section, the two substances were very abruptly defined; the cortical substance was pale, yellowish, and notably tumefied, while the cones were of a brown-red colour, almost ecchymotic. The mammillæ were black, and yielded abundantly on pressure a semi-fluid, yellowish, matter, with drops of oil.

We have in Cholera, without doubt, one of the best characterized phases of albuminous nephritis. The characters of the primitive alteration of the kidney in cholera, are, well-marked hyperæmia, with cessation of the urinary secretion, or with albumen in the urine. From these, no doubt, all the changes peculiar to Bright's disease might arise, and continue during convalescence. We here see one of the points of analogy between Cholera and a great number of other affections, especially eruptive fevers. We find here also the anatomical explanation of choleraic albuminuria, which has been observed in 511 cases out of 697, in the Hôpital du Val-de-Grâce; and also of complete suppression of urine, observed in 149 cases, and of polyuria, which has been noticed in 111 cases.

BRAIN. The following table exhibits the lesions observed in this organ.

Thirty-eight algide cases, varying from six to forty-eight hours.

Pia mater.	CASES	*Cortical substance continued.*	CASES
Well-marked very fine injection	34	Rosaceous, with fine dotting	5
Sero-sanguineous suffusion	33	Rosaceous, and dotted with large grains	3
Serous infiltration	1	Appeared as if bruised	1
No injection of large vessels	1	Simple fine superficial dotting	3
Normal appearance	2	Ash-coloured, pale	2
Not observed	1	Somewhat softened in different parts	1
Cortical substance.		Not observed	16
Hyperæmia	1	Normal appearance	3
Rosaceous in parts	4		

Medullary substance.	CASES
Moderately dotted	14
Finely dotted	12
Very finely, but partially dotted	1
Rosaceous in parts	1

Twelve cases with torpid reaction, varying from five to ten days.

Pia mater.	
No injection	6
Evident fine injection	5
Sero-sanguineous suffusions	8
Serous infiltration	4
Not observed	1
Cortical substance.	
Obscurely dotted	2
Rose-coloured in parts, with fine dots	2
Dotted with large grains	1
Localized pulpy softening	1
Medullary substance continued.	CASES
Increased consistence	8
Diminished consistence	3
Not observed	4
Normal appearance	5
Cortical substance continued.	
Pale	1
Consistency increased	1
Not observed	6
Medullary substance.	
Moderately dotted	4
Finely dotted	5
Ecchymotic dots	1
Cerebellar apoplexy	1
Extensive softening	1
Pale	1

Seven cases with weak reaction, not freely established; sometimes somnolence, sometimes delirium, with algidity. Duration, three to four days.

Pia mater.	
Injected	6
Sanguineous suffusion	5
Serous infiltration	3
Cortical substance.	
Rose-tint, with yellowish and brown-red reflexion	1
Simple rose-tint	1
Superficial partial dotting	1
Cortical substance continued.	
Ash-coloured	1
Normal	1
Not observed	2
Medullary substance.	
Finely dotted	4
Moderately dotted	3
Consistence increased	2

Three cases without reaction, cyanosis and algidity persisting; duration, four, six, and ten days.

Pia mater.	
Finely injected	3
Sanguineous suffusion	3
Cortical substance.	
Partial superficial dotting	1
Consistence increased	1
Not observed	1
Medullary substance.	
Finely dotted	2
Dotted with large grains	1

We observe, first, that the injection of the membranes, which was almost always well-marked in the first stage, partly disappeared during reaction, during which serous infiltration increased; and, at the same time, the sero-sanguineous effusions were re-absorbed. In 38 algide cases, we 34 times found fine injection of the pia mater, 33 times sero-sanguineous suffusions, once serous infiltration; while, in 12 torpid cases, 5 times only the injection was well marked, 8 times there were sero-sanguineous suffusions, and 4 times serous infiltration. In the 7 cases where reaction, though feeble, existed, serous infiltration was found 3 times; and in the 3 cases without reaction, this sub-arachnoid œdema was not noticed. The injection of the pia mater was always of a more or less deep red, sometimes of a wine colour. The sanguineous suffusions chiefly occupied the lower half of the lateral surfaces, and were equally abundant anteriorly and posteriorly. They sometimes occupied also the base of the brain, especially the inferior surface of the anterior lobes, the posterior part of the cerebellum, and the outline of the peduncles. Pressure with the scalpel dispersed them into the loose tissue of the pia mater. Serous infiltration was sometimes met with above the superior vermiform process; in all these cases it was slight, and was chiefly manifest at the convex and superior part of the hemispheres.

The lesions of the grey cortical layer are the most frequent alterations of the brain in Cholera. In 22 algide cases, where it was examined, after the pia mater had been removed, and it had been washed with water, it was 3 times normal, twice pale, 15 times partially rosaceous or dotted, once it

appeared bruised at one point, once it was softened in different places. In 7 torpid cases in which it was carefully examined, it was once pale, once presented ecchymotic dotting, once pulpy softening, and 4 times local dotting or rose-tint. It seems then, that the alterations which take place in the grey substance during the algide stage, continue and tend to become more marked during the torpid period.

The medullary substance was found hyperæmiated in various degrees in 28 out of 34 algide cases; the consistence was diminished in 3, increased in 5; and normal in 5. Of the 12 torpid cases, 9 presented hyperæmia, 2 hæmorrhage, and 1 paleness.

We have also more carefully noted the state of the nervous centres in 16 cases, forming a new series of observations: 12 were algide cases, varying from twelve to seventy-two hours; and 4 torpid, varying from three to five days. The cortical substance presented, in 2 cases, remarkable paleness at the convexity, with ashy-white colour; in 2, a general rose-tint, most marked below; in 12, partial rose-tints, predominating at the anterior and inferior portion; in 4, orange-tints, extending over entire convolutions, or in small isolated spots. In most cases, the deep layer of the cortical substance was more coloured than the superficial; in 4 cases only, we observed the external part to be of a deeper tint at some points, the internal layer remaining pale, of a pearly grey. The rose-colour was sometimes, and the orange-tint always, superficial. The dotting and injection were always in relation with the rose-coloured appearance: they were sometimes confined to the deep, and more rarely to the external, layer. In most cases, they could be traced into the entire thickness of the grey matter; in some, the surface of the convolutions appeared as if superficially pierced with holes. The grey substance presented, as well as the simple very fine dotting, and that in large ecchymotic grains, various intermediate degrees. These were always localized, generally on the anterior and inferior parts, on the convexity, and on the anterior and inferior extremities of the middle lobe; in 2 cases we noticed ecchymotic spots in large grains, once with pultaceous softening of the cortical substance; in 2, a brown-red, almost confluent dotting, extending over 3 or 4 millimètres; in one, an almost confluent deep red dotting, extending into the neighbouring medullary substance; and in 8, partially scattered fine dotting. In 2 cases, the cortical layer seemed increased in thickness; and in 4, it was notably softened, and was torn up with the pia mater. In the medullary substance (centuam ovale), were found analogous, but less strongly marked appearances; in 2 cases, there was almost confluent fine dotting, with insulated spots of a diffuse light violet-colour; in 6, there was abundant fine dotting, especially in the posterior third of the centrum ovale, but less marked in the anterior, and still less in the middle third. From the dotted surface of various sections of the brain, there were seen to exude, after exposure to air for some time, large drops of rose-coloured or clear red liquid blood.

On the surface of the ventricles, there were more strongly-marked lesions; in 6 cases, there was considerable turgescence of the ventricular vessels; in one, there was also sanguineous suffusion along the course of the vessels; in one, localised sanguineous infiltration of the choroid plexus; in one, sanguineous suffusion on the surface of the left corpus striatum, with subjacent dotting, in large grains and fine points, generally more marked on the left side than on the right; in one, brown-red injection of the fourth ventricle with ecchymotic dotting; in one, very distinct rosaceous injection in the whole posterior part of the right ventricle, with abundant fine dotting in the vicinity of the fornix; in 2, there was softening of the posterior part of the fornix; in one, the lining membrane of the ventricles was easily detached.

The general consistence of the brain was notably increased in 4 cases; in one, the convex surface of the hemispheres, and the internal surface of the ventricles, were of abnormal hardness, coincident with thickening of the arachnoid: this was no doubt the effect of an old inflammation. In the other

cases, the consistence of the brain was such as might be expected, at the time when the examination was made—6, 12, or 18 hours after death. The arachnoid, in 5 cases, presented a whitish pearly aspect; it was glutinous, and a little thickened in these cases. This alteration was more appreciable in the spinal canal than around the brain; the serous membrane, where it had become slightly whitish, could be seen distinctly at points where it is difficult to perceive it, from its transparency and thinness. In a small number of cases, some very fine whitish granulations were met with on the convex surface of the brain; they were situated in the deep layer of the arachnoid, and were scarcely visible after the removal of that membrane.

Putting aside the lesions of the membranes, as being met with in many other diseases, and hence not characteristic of Cholera, we find, in the cerebral substance, a group of lesions peculiar to Cholera, and not hitherto noticed. These alterations are all referable to one law. They all denote a tendency to hæmorrhage in the nervous centres. A question here arises: Do these choleraic lesions stop at the hæmorrhagic dottings, or at partial softening? May they not in some cases, as in the lungs and other organs, extend into considerable spaces, and form true foci of apoplexy and softening? The following case, in which we find all the different degrees, from congestion to capillary apoplexy and hæmorrhage, entirely removes all doubt on the subject.

Case. "Mette, a veteran non-commissioned officer, aged 45 years, 22 years in the service, of medium constitution, slender muscular development, grey hair, was in perfect health when seized, on the 13th of June, with diarrhœa. On the 16th, he had cramps and vomitings. On admission into the hospital, he had involuntary stools; face cyanosed and cool; eyes very hollow, surrounded with a bluish circle. 17th. Pulse thready, voice lost, extremities cold. 18th. Pulse 80, thoracic constriction, colour of face almost normal, no orbital excavation. 19th. Temperature good, pulse 66, small, face coloured, no headache, no urine, hyperæmia of conjunctivæ. At 9 P.M., transient delirium, hiccup. 20th. Pulse 72, skin clammy, face somewhat of a violet-colour, superficial veins distended, vague look, no sustained attention, answers only "no", respiration stertorous, as if apoplectic; (12 leeches to the temples, sinapisms, and cold applications). 21st. Pulse 70, soft, face red and swollen, eyelids hyperæmiated, vacant look, hiccup, jerking respiration; (20 leeches, and cold compresses). *Evening;* in same condition; (blister to nape of neck). Died at 1 A.M. on the 23rd. The autopsy took place nine hours after death. *Skull.* The dura mater was externally pale. There was a pretty large quantity of citrine serosity at the base, in the cerebellar fossæ. There was sub-arachnoid serous infiltration at the convexity; rosaceous or wine-red infiltration on the lateral and inferior surfaces of the hemispheres, as well as on the posterior and inferior parts of the cerebellum. The inferior surface of the left hemisphere of the latter organ, presented, in the space of a square millimètre, an apoplectic clot, the dark blood of which, being only partially coagulated, communicated with the neighbouring sub-serous effusions. The nervous substance around the irregular evacuation was reddish, and presented dotting with large grains, and a pulpy appearance, like a strawberry. Forty grammes of sanguinolent serum were found in the ventricles of the brain: the posterior part of the fornix was a little softened: the dotting was very fine and almost confluent on the sections of the centrum ovale. Rosaceous suffusions were observed on some convolutions of the convexity, and on the posterior part of the right hemisphere. At the middle of this hemisphere, between two convolutions, was found a small brown-red clot, as large as the head of a pin. *The grey substance, when dissected round this point, was found infiltrated with blood, ecchymosed, and softened, for the extent of half a centimètre.* The adjacent white substance was also a little altered. Although the brain, as a whole, was flabby, the cerebral pulp itself was of tolerably firm consistence. The pia mater was easily raised from the anterior part of the right hemisphere; posteriorly and laterally, it drew up with it considerable portions of the soft-

ened cerebral pulp. The grey substance presented a wine-red tint on the convolutions, with very distinct dotting in points; the subjacent medullary substance was reduced into a pulp, for a thickness of from 1 to 5 millimètres.

If we compare this case with two of cerebral apoplexy observed by M. Lévy, and published in the *Gazette des Hôpitaux* for 7th July, both with albuminous urine, one with rice-water liquid and abundant psorentery in the intestines, the other with ecchymosis of the heart and psorentery confined to the upper part of the small intestines, it will seem probable that Cholera acted here as an exciting cause of hæmorrhage, in subjects predisposed by age.

Medulla. In the notes of the first 60 autopsies, we find the following observations. In 5 cases, the medulla presented no remarkable appearance; in the 6th, there was *ecchymotic dotting, with softening of the adjacent pulp.* After this, we carefully examined the spinal medulla in 13 autopsies, in the following manner: 1. The medulla was raised with the dura mater, and the latter was cut through longitudinally. 2. The medulla, being laid on its posterior surface, the neurilemma was divided longitudinally through its whole extent by means of a pair of fine scissors. 3. The anterior commissure being apparent, the section was completed by means of a sharp scalpel. 4. The consistence of the different parts of the two halves of the medulla was studied under a stream of water; if softening existed, its extent was at the same time recognized. 5. Each of the halves was unfolded, by separating the medullary columns which meet in the middle line, in a layer of grey matter of unequal thickness. By this latter operation the whole of the grey substance was brought into view, so that its injection, dottings, and ecchymoses could be studied.

In 4 cases, there was congestion of the rachidian sinuses; in 6, blood was extravasated in the rachis, especially round the origin of the sheaths furnished by the dura mater; in 3, moderate injection of the vessels of the medulla; in 4, fine injection, in one of which it was confined to the inferior half; in one, there was rosaceous subserous effusion at the commencement of the dorsal region. In the nervous substance, we 3 times found the consistence normal; 8 times partial softening. In 5 of these the consistence was diminished in the cervical region. In one of the remaining cases there was marked softening at the middle of the dorsal region, so that the jet of water easily dissected out the medullary fibres as far as the middle of the cervical region, where there was found a brown-red dotting formed of effused and coagulated blood; in one, there was softening for a centimètre at the end of the cervical region; and in the same subject, there was marked softening for 2¼ centimètres at the commencement of the dorsal region, and fine ecchymotic dotting with rosaceous suffusions more marked on the right side; in the third case, there was softening in the middle of the cervical region, with fine dotting of the medullary columns. In all the cases where the white matter was found altered, the grey matter was the seat of corresponding and more strongly marked lesions. Of the 13 cases, one presented only a slight rose tint at the inferior enlargement; in 4, there was a general rose-colour, with fine injection, dotted in unequal grains and violet suffusion; in 3, there was fine dotting; in 3, tolerably large clear red dotting, between the grey substance and the medullary columns; in 1, there was, at the middle third of the cervical region, red colouration with abundant large granular brown red spots (ecchymose of a millimètre in extent, where the blood was liquid); and in 1, the lower part of the cervical region present, for the length of two centimètres, groups of small ecchymoses to the number of ten or twelve on a section; the largest contained fluid blood, and were a millimètre in diameter.

To give a good example of all the lesions we have just enumerated, we transcribe the result of an autopsy performed at the Hôpital du Val-de-Grâce, on 23rd of August, seven hours after the death of a patient in the algide stage; it had lasted 48 hours.

Spinal canal. There was much blood in the sinuses; sanguineous infiltration of the fatty tissue; the arachnoid slightly whitish, opalescent, viscous.

Well marked injection of the spinal vessels which ramify in the pia mater. On a longitudinal section of the medulla, there was observed very fine injection of the grey substance, with a rose tint. At the end of the cervical portion, several blueish spots appeared in the medullary substances; on cutting into these, small ecchymoses, of the size of from one to two millimètres, were found. The grey matter presented severe lesions in the whole extent of the cervical region. There was in this part, a dotting of unequal bright red irregular grains, often touching each other. These changes were mostly more marked on the left side than on the right. On the right side, for the extent of a centimètre, at the level of the third cervical vertebra, there was found a confluent bright red dotting. There was a single small ecchymosis in the medullary chords of the two lower thirds of the medulla. The examination of the medulla under a jet of water shewed still better these ecchymoses, which were situated most plentifully in the cellular network which separates the grey matter from the medullary columns, and shows that the upper third is notably less firm than the other parts; for it more easily becomes flocculent, especially on the left side.

We find, then, that in Cholera, the medulla is often the seat of very important lesions at its upper part, due regard being had to its delicate structure, and to the less important alterations in this centre of the nervous system. If these softenings and ecchymoses were met with in all cases, instead of in two-thirds, we should have an explanation of the fatality of Cholera; but in some cases they are wanting. But we cannot forbear associating with these affections, the nervous symptoms,—cramp, thoracic constriction, dyspnœa, vertigo, noises in the ears, affections of the sight, in the cerebral prodromata which M. Lévy has observed in a large number of cases.

All these new or scarcely noticed facts, might doubtless yield matter for many theories; but, fearing to mix with our researches hypotheses which can lead to no positive result, we will be sparing in our inductions.

Conclusions. In this rapid review of the anatomical lesions produced by Cholera, we find the two following facts evolved, in a parallel manner.

1. A peculiar form of congestion, simple, or accompanied with hæmorrhage.
2. The phenomena of intestinal secretion.

Neither of these can be considered as the predominant affection; although produced under the general influence of the same specific cause, they have each an independent progress, and are far from being of proportionate severity. On viewing these lesions with regard to their origin and extent, the choleraic congestion seems to affect an intestinal localisation; it appears with the prodromata, and proceeds sometimes slowly, sometimes with formidable suddenness. Its peculiar characters, which we have pointed out, the special alteration of the blood which accompanies it, its preference for the important parenchymatous organs,—the heart, lungs, liver, brain, and especially the spinal medulla,—make it the phenomenon which best discloses the general action of the morbific cause. Does this cause act primarily on the blood, on the nervous system, or on the walls of the capillaries, and on the tissue itself of certain organs which are affected with general or partial softening? None of these hypotheses is justified by facts. The conclusions to which the most minute anatomical investigations tend, is, that Cholera, instead of commencing in this or that system, attacks simultaneously all the tissues, and at the same time exercises a special and undefined action on the blood in the capillaries. But though the verification of all these changes be essential to the pathology of Cholera, and to the comprehension of the phenomena of the algide and the torpid periods, it does not aid us to understand the intimate nature of the specific cause which engenders the disease; we see, in our anatomical researches, the effects, and not the cause of the disease. To overcome this difficulty, we must wait till various observers have, in the course of time, contributed the results of their researches on different epidemic affections; then a compa-

rison can be established on a sure basis, and the work of nosological classification may commence.

All artificial classifications necessarily err, when an attempt is made to determine the nature of those great epidemic scourges which have several local effects and a general action, very strongly marked at the same time. We are too little advanced in the study of anatomical or functional alterations, to indicate the coordination of the numerous phenomena of which we have described the results,—the direct or indirect products of Cholera. It is better, in the actual state of our knowledge, to renounce all attempts of this kind, which will only end in reproducing, under a new face, the fruitless essays of our predecessors. *Cholera inter intestina stomachumque versatur, ita ut cujus potissimùm partis sit, non facile dici queat.* This sentence from Celsus well expresses the doubt which exists at the present day. Localised at first in the colon; then considered as a disease of the bile by Hippocrates, Galen, Celsus, and Cœlius Aurelianus; better studied afterwards, but always exclusively referred to the intestinal mucous membrane, Cholera would appear to us in the present day as a primitive affection, *totius substantiæ*, resembled by nothing in the outline of its symptoms, or in the order of its anatomical changes. To arrive at general conclusions as to its nature, it would be necessary to compare, in a certain number of epidemics, the anatomical alterations with one another, as well as with what is positively known of the anatomical state of the nervous centres in other epidemic diseases, and then to study the circumstances, as all facts tend to demonstrate, which give rise to this epidemic scourge. We should then have a collection of facts, from which would arise, for Cholera as for other epidemic affections, the elements of a natural classification, towards which the principal efforts of observation should be directed, and towards which should tend all researches which are intended to remain in the history of science.

VIBRIONES IN THE INTESTINAL DISCHARGES AND MUSCULAR TISSUE OF CHOLERA PATIENTS.

In the paper on the Intestinal Discharges in Cholera, by Dr. Parkes, published in the London Journal of Medicine for February, vibriones are mentioned as having been found in the stool of a Cholera patient, by Dr. Jenner; and in another case, they were found in the first urine passed after the commencement of reaction, after it had been standing for some hours. Since that period, other observers have noticed a similar appearance. In the *American Journal of the Medical Sciences*, July 1849, is the following communication from Dr. Waldo Burnett, which was read at a meeting of the Boston Society for Medical Improvement, on June 11th, 1849.

"On Sunday, June 3rd, a man at the northern part of the city was attacked with the premonitory symptoms of Cholera. The case ran a rapid course, and in a few hours he was in a state of collapse; on the next morning, at ten o'clock, he died. A post-mortem examination of his body was made, on the afternoon of the same day, at half-past three o'clock. At this autopsy I secured a quantity of the 'rice-water' liquid found in his intestines; also a portion of one of the pectoral muscles. These specimens I submitted, on the morning of the 5th, to careful and repeated microscopical examinations, and obtained the following results.

"1st. *Rice-water Liquid.* This was found loaded with epithelium of both varieties, viz., the *cylinder* epithelium, and the *tesselate* or pavement epithelium. These cells were floating about, not only singly, but in large flakes, of one-thirtieth to one-tenth of an inch in size, and attached uninjured to the 'basement membrane' from which they grow; so that it would appear, that this 'basement membrane' had been stripped off, bearing the cells upon it. The cloudiness and opacity of this liquid seemed entirely due to the presence of immense quantities of these epithelial cells, since no mucous corpuscles, or any other corpuscles whatever, as well as no shreds of lymph,

could be detected from repeated examinations. It is well known that the *tesselated* or pavement epithelium covers the mucous membrane of the mouth and œsophagus, while the mucous membrane of the remaining portion of the alimentary canal is covered by the cylinder epithelium. Therefore the presence of both varieties of this epithelium in these discharges, would show that they came from the surface of the *whole* of the alimentary canal, instead of from its intestinal portion only. Loitering here and there, in the field of the microscope, was an occasional crystal of the *oxalate of lime*. For a long time I could perceive nothing in this liquid but the two substances just mentioned, viz., the epithelium and the crystals of oxalate of lime. But, after increasing the power of the instrument, a third element appeared, and was then so apparent, that I greatly wondered I had not before seen it. This was the presence of thousands of thousands of *animalculæ*, swarming and sporting about in every direction. For a time, I thought that this must be a mere accident, but very many subsequent examinations afforded the same results; and, that I might not be the only persons to vouch for their presence here, I showed them to my friend, Dr. D. H. Storer, of this city, who made the remark, that he distinctly saw them 'writhing about.' By a power of five hundred linear diameters, they could clearly be seen, some as *linear* moving bodies, others having a more globular character—the former seeming to be only a linear aggregation of the latter. They seemed, therefore, to be *vibriones*, and by measurement, the single animals were from 1-16,000 to 1-20,000, and the compound chain-like animals were from 1-8000 to 1-4000 of an inch in diameter. I state these facts in this precise manner, since some, it is probable, may think that all this is simply the *molecular motion* so often observed in the secretions. But that they were distinct animals having voluntary motion, I have no doubt, since Dr. Storer as well as myself saw them moving in a serpentine manner over the field.

"2nd. *Muscular Tissue.* Not thinking of seeing any of these appearances, I examined a small bit of muscle, with reference to ascertaining, if possible, on account of the involuntary muscular contractions during life, the proximity of the *striæ* of their *fibrillæ*. But my perception of these relations was not very acute, from my astonishment to find in this tissue these same animalculæ in great numbers. A little distilled water, used to soften the tissue, brought out great numbers of them into it, so that they were seen, as in the intestinal liquid, sporting about hither and thither. In these examinations, all possible care and precaution was used, to prevent the introduction of any foreign bodies into the field of observation. The great fact to be borne in mind, as the result of these examinations, is that the same *animalculæ* were found in great numbers, both in the intestinal liquid and in the muscular fibre. And the fact of their being in the muscular fibre would argue, I think, decidedly against the supposition of their mere accidental presence in the liquid of the alimentary canal.

"I much regret that, before these observations were made known, I should not have had the advantage of more specimens from patients who have since died here of this disease. And although it may seem premature that these results from a *single case* should thus be made known, yet they are exposed as simple facts, and upon future examinations I shall rely for the proof, either, on the one hand, that these *animalculæ* were simply *accidental* to *this* case alone; or, on the other hand, that their presence is constant in this disease; and if the latter be found to be correct, as would seem thus to have been foreshadowed, there will then be sufficient time to attempt to trace their *causative* relation with this dire disease now among us. Furthermore, should future investigations show that these *vibriones* are equally common in the tissues and secretions of patients dying of other diseases; in other words, that their presence in this disease is not specific; yet the above note will not, perhaps, be considered without value—since it may serve to call the attention of better observers than myself to this interesting subject."

UREA DETECTED (?) IN THE RICE-WATER EVACUATIONS OF CHOLERA.

Dr. Henry Johnson, of Shrewsbury, has published, in the *Provincial Medical and Surgical Journal* for Sept. 19, a paper, the object of which seems to be to show, "that urea is contained in the discharges from the bowels, in Cholera patients, at a time when the secretion of urine is suppressed, or, I ought rather to say, retained." He considers that it is a "new fact"; at least he can find no record of it in any work to which he has had access. Dr. Johnson's paper suggests several remarks: 1. He does not give us sufficiently absolute proof that the stools were entirely devoid of admixture with urine. 2. His description of the crystals is not an accurate description of the crystals of nitrate of urea. 3. His inadequate observations are not sufficient to set aside those of Garrod, Parkes, and others, who have failed to obtain any trace of urea in the dejections passed by Cholera patients in the state of collapse. 4. Dr. Johnson ought to have stated the stage of the disease in which the observations were made; because we conceive it quite possible—nay, even very probable—that after reaction commences, urea may be thrown off both from the mucous membrane of the bowels and from the skin, while it is very difficult to understand how it should exist either in the excretions of these organs, or even in the blood itself, during the algide stage, when all the functions are at a stand-still,—when, according to the best observations, there is really no urea formed. We cannot help saying, that it would have been better had Dr. Johnson refrained from publishing his observations, till he could show, more satisfactorily, their value. Hasty and imperfect experiments are not sufficient to set aside general doctrines, established by the accurate and independent observations of our most accredited organic chemists. With these prefatory remarks, we subjoin Dr. Johnson's paper.

Dr. Henry Johnson's Communication. "*a* About two or three fluid-ounces of the rice-water evacuations of a man, ill of Cholera, were evaporated to dryness in a steam-bath.

"*b* Distilled water, heated to 200° Fahrenheit, was poured upon the dry mass (*a*), broken up with a spatula, and the mixture was digested in a steam-bath for about half an hour.

"*c* The digested fluid (*b*) was filtered, and the filtered fluid was evaporated again to dryness in a steam-bath, and the residue digested with a considerable proportion of absolute alcohol, at a greater heat, for half an hour.

"*d* The digested liquor (*c*) was again filtered, and the liquor evaporated to dryness.

The dry mass (*d*) was now dissolved in a small portion of warm distilled water. It was concentrated, by evaporation, to the consistence of a thin syrup, and a few drops of nitric acid added. A slight effervescence took place; and, having been set aside to crystallize, the next morning I saw *distinct*, long, crystals, which could be nothing else but *nitrate of urea*.

"The foregoing process is that given by Dr. G. O. Rees (*Analysis of Blood and Urine*, p. 38), for the examination of blood supposed to contain urea.

"I have good reason to believe that no urine was passed with the evacuation now examined. The man from whom it was procured, was, at the time, in the early stage of the disease, and had suppression of urine, and was not known to pass any until a day or two afterwards. I determined, however, to repeat the experiment, and I therefore sent to a union workhouse in the neighbourhood, where the cholera was still raging, to procure another specimen of the rice-water evacuation, requesting that every precaution might be used to obtain it in the proper stage of the disease, and free from admixture. The same process was followed with this second specimen; and I obtained a fluid, which, on gentle evaporation, after the addition of nitric acid, deposited abundant crystals. These appeared, under the microscope, as beautiful 'thin rhombic plates'; but the acute angle was not 'replaced by a small plane', as described by Ragsky. (*Dr. Ranking's Half-Yearly Abstract*, vol. *ii, p. 356.)*

"There is, therefore, I think, no doubt that *urea* is contained in the discharges from the bowels in cholera patients, at a time when the secretion of urine is suppressed,—or, I ought rather to say, retained. I believe that this is a new fact,—at least, I can find no printed record of it in any work to which I have now access."

Professor Simon (*Animal Chemistry*, Sydenham Society's edition, vol. i, pp. 49 and 325) says that urea has been discovered, by four chemists, in the *blood* of cholera patients; but he makes no mention of it in the evacuations. Dr. Watson (*Lectures*, vol. ii, p. 532), after remarking the freedom of cholera patients from coma, when the urine has been retained for several days, says: "Was the urine here drained off from the blood, in the enormous and unnatural flow from the stomach and bowels? I think it probably was; but I do not know that any chemical search was ever made for that substance in the fluids so effused." These notices I have found since my experiments were made, at which time I was not aware that any one had even conjectured the existence of urea in (what appeared to me) a very unheard-of locality. The fact appears to me curious, and deserving of being recorded, if only for the sake of leading to further investigation. I have, at present, no opportunity of pursuing it further, as the cholera is subsiding in this neighbourhood."

DR. J. BUCHANAN, ON CHOLERA AS IT APPEARED IN NASHVILLE, TENNESSEE, U. S.

The following paper, which we extract from the *Boston Medical and Surgical Journal* for June 6th, 1849, as copied from the *Western Journal of Medicine and Surgery*, possesses several points of interest: viz., among others, 1, The period which elapsed between the arrival of the disease and its outbreak; 2, The bearing of some of the facts on the question of contagion; 3, The decided benefit derived from an alcoholic solution of camphor with laudanum; 4, The return of bilious discharges without the use of mercurials.

Dr. Buchanan's Memoir. On the 27th of December, 1848, the steamer Caroline Watkins, from New Orleans (where Cholera was prevailing when she left that port), arrived in Nashville, one death having occurred on board from Cholera. On her further passage, occupying about ten days, she lost eight persons from the disease. These deaths occurred among deck passengers and firemen, most of whom were foreigners, and, as represented, very imprudent under treatment; one or two of the deaths were among coloured persons. On her arrival, great excitement prevailed, and every one was anxious to learn, each from his own medical adviser, what must be done to prevent or cure its dreaded attack. Almost every family had the remedies at hand, and were well instructed how to use them at a moment's warning.

But for three weeks there was no appearance of Cholera, and the excitement began to subside, when on the 20th of January, twenty-five days after the arrival of the Watkins, and several days after the arrival of other boats on board of which there was Cholera, one case occurred in the lower part of the city, in a house almost surrounded by water; for at this time there was a great flood in the Cumberland, so that the upper and lower parts of the city were inundated. The occupants of the house in which this case occurred were of the lowest and most indigent class. This case, a man of intemperate habits, and who had exposed himself to the weather and in the water for several days, died in a few hours after his attack. On the next day, the 21st, another inmate of this house, and a fellow in all respects to the first case, was seized with the disease, but was immediately removed to comfortable quarters, where, under good medical advice and nursing, he seemed to be convalescent, but in a few days died from his own imprudence.

The third case occurred in the same house; another associate of the two first was seized on the 22nd, and was also removed, together with all the families who occupied the house, to better quarters in a more elevated part of the city. But, notwithstanding every effort was made to save him, he collapsed, and died in about thirty-six hours. This case I visited in its last stages, and recognized all the characteristic symptoms of Asiatic Cholera, such as I had before witnessed in 1833-34. The haggard but indifferent countenance; cold, blue, and shrivelled extremities; pulseless wrist; sunken, or almost lost, voice; with clammy sweat, were all present; as also rice-water evacuations, which clearly indicated the nature of the disease. From this time Cholera gradually increased; several more deaths occurred in this family and in the immediate neighbourhood. It also made its appearance in the upper part of the city, among a class of citizens much more comfortably situated, and greatly above high-water mark. The force of the disease seems to have been spent upon these two neighbourhoods, but several deaths occurred in the heart of the city, and a few of our most respectable citizens were carried off by it. One family, in which the disease appeared with great severity, lived in a good house in an open lot or field, upon an elevated situation in the suburbs of the city, and seemed to be remote from all city influences, or other cases productive from it. In this family two deaths occurred, and every member suffered from it. The black population and the lower classes of society, the most ignorant and indigent, were the greatest sufferers. About the 4th or 5th of February the disease reached its greatest height, and as many as four or five died in twenty-four hours. Previous to this time, from one to two or three deaths occurred daily, and after this the disease gradually declined, so that by the 26th of February we regarded it as at an end. The number of deaths were in all about forty or fifty.

During the prevalence of the disease almost every one in the city complained more or less of some uneasiness in the stomach and bowels. Hundreds suffered from diarrhœa; and some from dysentery, which, in a few cases, was very painful and difficult to cure. Many were afflicted with violent spasms of the stomach and bowels and abdominal muscles without discharges, similar to what we commonly call cramp colic. In some cases all the voluntary muscles were violently cramped; the spasms recurred at intervals of a few minutes, not unlike tetanus. Several cases of typhoid fever occurred during its prevalence, but the symptoms were not influenced by it in the slightest degree. In the month of December, and until late in January, our community all suffered more or less from a mild epidemic influenza. Only in a few instances did it appear in a violent form or require medical aid. When Cholera made its appearance it rapidly subsided, and very rarely did we witness a complication of choleraic symptoms with those of influenza.

You are well aware that several of our physicians here regard Cholera as contagious, and many of the most venerable of the profession will not admit of the existence of a case, without it can be traced to a contagious source, nor do they regard the diarrhœa or other disordered conditions of the stomach and bowels, as they have prevailed here, as at all premonitory of Cholera. I differ very, very widely from those who entertain such opinions, and think we have passed through an epidemic form of Cholera, which, compared to the epidemic of 1833 and 1834, was mild in its character, but which, except for the prompt and efficient means used to control it, would nevertheless have proved much more fatal than it really did. I considered the whole community as more or less affected by it, and advised all who consulted me to regard every symptom of disorder in the digestive organs, especially a diarrhœa, as premonitory of an attack; or, in other words, as the commencing or first stage of Cholera, and to use means at once to arrest it. Such also, I believe, was the opinion and advice of a majority of the physicians in our city. Here, then, are the causes of the boasted success in the treatment of the late epidemic.

1st. Our city was well cleansed and in good condition when it appeared.
2nd. Every family, who were able, were supplied with remedies, and were made aware of the nature of the first symptoms of the disease, and also of the best modes of living so as to prevent an attack.
3rd. The epidemic was mild in its character, and gave all fair warning, so much so, that even those who died might almost certainly have been saved, had their intelligence and means been sufficient to guard against its insidious attack. It is well ascertained that all those who died had diarrhœa, or other premonitory symptoms, for two or three days or longer before they applied for assistance. And some cases were even in a collapsed state before medical advice was sought. Few, if any, cases occurred suddenly and violently, as in the former epidemic. All those who applied to a physician in the first stage of diarrhœa were promptly relieved, and hundreds cured themselves with the remedies at hand, with which they had been previously furnished. and instructed how to use. Cholera, then, as it lately appeared at Nashville, was, when taken in time, curable in almost every instance.

The weather was neither very cold nor warm for the season. The thermometer ranged in January from 13° on the 6th, to 68° on the 30th, and was generally about freezing point at sun-rise, and 35° or 40° in the afternoon. But, for the most part, the weather was exceedingly disagreeable, being moist, cloudy, and chilly, with wet and muddy streets, and with a flood in the river which reached its maximum height on the 22nd, being 45½ feet above low water mark. The third violent case of Cholera occurred on the 22nd, the day on which the flood was at its height.

The winds during this month were variable, but prevailed from the N.N.E. and S.S.E. The day on which the first case occurred was cloudy and drizzling rain. Thermometer 40° at sun-rise, wind S. and S.W. The balance of this month was cloudy and rainy, with a temperature generally above freezing point at sun-rise; and from 40° to 60° in the afternoon. The weather, during the month of February, was similar to January, but was colder and clearer, and the winds prevailed from the N.N.W. We had several beautiful days in February, with bracing winds and clear sky. The middle of the month was very cold; the thermometer on the 18th being 4°, and on the 10th ice formed on the ponds three and four inches thick, and our ice-houses were all filled. From this time the weather grew warmer, and on the 26th Cholera left our city. At present we are entirely free from the disease. The adjoining counties have suffered in a slight degree from diarrhœa and general disorder of the digestive organs.

Treatment. In all cases of premonitory symptoms, such as pain and fulness in the stomach, which was often complained of, and in diarrhœa, which was the most common symptom, I advised the use of the following mixture: R. Alcohol, 1 pint; gum camphor, ʒij. Dissolve, and add laudanum, ʒij; compound spirits of lavender, ʒij. Of this mixture, thirty to sixty drops were directed to be used upon a lump of loaf sugar, and repeated after each evacuation from the bowels; or in case of pain or spasm in the stomach or bowels, every half hour until relief was obtained. In many violent cases it was used in larger doses, and in cases of mere uneasiness in doses of ten to twenty drops repeated *pro re natâ*, as a preventive. I assure you it had the desired effect in all cases in which it was used, and hundreds cured themselves with it who suffered from diarrhœa, without the aid of any other remedy. In more violent cases, or where the diarrhœa and vomiting were suffered to run on without treatment until spasms in the muscles, prostration, and approaching collapse were evident, I used, in addition to the above, two or three-grain doses of opium, and repeated at intervals of one, two, or three hours, according to the urgency of the symptoms. The pill of opium was generally washed down with brandy and water, and as many as ten or twelve grains were administered in bad cases in twenty-four hours. In the absence of opium, laudanum was used with the brandy in teaspoonful doses; and in very urgent cases of spasms

and approaching collapse, all these remedies, together with sinapisms to the abdomen and extremities, and also hot applications to the feet and stomach, and other parts suffering from cramps and pain, were applied; the patient all the while being well covered up in bed, and using hot sage, mint, or other teas, such as were most agreeable. This course of treatment was successful in every case that came under my own observation, except in two cases, and one of these was collapsed at my first visit. In no case did I use one grain of calomel or other mercurial, except in two instances, and then I believe with disadvantage. In the large majority of cases, the purging was checked at once by the above treatment, and the bowels were suffered to remain unopened for three or four days. At the end of this time, or earlier in case of pain or other disposition to stool without evacuations, a tablespoonful of castor oil, with fifteen or twenty drops of laudanum, generally produced a free bilious discharge, such as often follows a dose of calomel.

In some cases, however, a low typhoid state of fever comes on, with red and swollen tongue, feeble voice, sore throat, dry fauces, sighing, nausea, etc., which is always critical. I have no prejudice against the use of calomel in the treatment of Cholera or any other disease. On the contrary, it is my favourite remedy in the treatment of almost all diseases. I wish to state, however, a fact as observed in connexion with the late epidemic, which naturally gives rise to the reflection that, possibly, we place too much confidence in its powers in other diseases. I was surprised to see free bilious discharges without the use of some mercurial. But such was the fact in many instances from a dose of oil, and in many cases without the aid of any purgative; and where the bowels had been confined for two or three days by the use of opiates, the first evacuations that followed were bilious, and the patients rapidly convalesced.

CALOMEL IN THE TREATMENT OF CHOLERA.

At one time, Calomel in enormous and often repeated doses was much confided in by our brethren in the East and West Indies in the treatment of all tropical fevers, including Cholera. Not a few still maintain and believe that it is the sheet anchor in yellow fever. Since, however, it has become generally known that most of the Calomel administered in large quantities remains inert within the bodies of those affected with tropical fevers, a change has taken place in practice, and a great saving of human life has been effected. This is allowed by all, who are conversant with the present Indian therapeutics, and with those in vogue some twenty years ago. It may be very true, that numerous recoveries take place after extraordinary quantities of Calomel have been swallowed; but it seems far more rational, and more in accordance with facts, to suppose that, in these cases, there was no therapeutic action of the drug, and that the absence of fatal poisoning was simply the result of its remaining inert, and being ultimately got rid of as unaltered Calomel.

Especially strange does that plan of treatment seem to us, which recommends Calomel in large doses, or in smaller doses (one or two grains), repeated at very frequent intervals in the collapse stage of Cholera, *when life is at a stand-still*; yet the Medical Journals, since the present outbreak, have teemed with glowing descriptions of its efficacy!

Dr. Ayre, a physician of Hull, is perhaps the most prominent advocate of the Calomel treatment of Cholera; and if his treatment has been generally adopted in that town, the fact of the disease having been much more fatal than in other places, is perhaps explained. In a communication to the *Lancet* of October 28th, 1848, he says:—

"Calomel in one or two grain doses, taken with one or two drops of laudanum, and repeated every five or ten minutes, for several successive hours, with an occasional omission of the laudanum at intervals, formed my exclusive remedy for the blue or collapsed stage in all the cases I attended. I scarcely used a single auxiliary means of any kind. I neither bled, nor *gave stimulants*, nor emetics, nor used the air-baths, nor frictions, except to

relieve the cramps, nor did I resort to any but the ordinary means for supporting the temperature or strength of the system. I gave only Calomel, and in the dose and manner described, and placed no other limit to the use of it, than that which was placed by the disease. So long as the disease in the collapsed stage continued, the medicine was continued; for pending the duration of that stage, I desire emphatically to aver, no absorption of the Calomel takes place, and no ptyalism can occur; and when that stage was yielding to the remedy, I took the needful care to suspend the use of it. Of the patients whom I lost, the greater number died in the stage of collapse, and within from twelve to twenty-four hours from my first seeing them; and nearly all, if not all, from causes which were superadded to the disease, and which, in most instances, might have been obviated by a more exact attention of the friends and attendants to their duty. Few, therefore, died in the consecutive fever, and of those who recovered, not one in ten had any fever at all; for it is one of the essential and distinguishing properties of this treatment, to prevent the occurrence of the consecutive fever, by its direct power to restore the secretion of the liver, which is alone required to put an end to the disease. I have already stated, that notwithstanding the very large quantities of Calomel that are often needed, and taken in single grain doses, ere the collapse be subdued, no ptyalism or other inconvenient effect is ordinarily produced by it. Not one in twenty of my patients had any ptyalism at all; nor in the very few who had it, did it last much more than a week, and not in any of them was there a vestige of it at the end of a fortnight. Indeed, after taking some pains to call to my recollection the number of such patients, I can only count up seven who could be said to make any complaint of it, and with those whose lives had been saved by it, it passed away entirely in ten or twelve days, and without producing, or leaving behind it, even the shadow of a shade of those effects which some might imagine to be inevitable, and, in its anticipation, bewail with profitless lamentation. In the way already described, I gave it alike to infants, though in a smaller dose, and to the aged, and in one instance, to a considerable extent to a woman ninety-two years of age, whom I found in the collapse stage, and nearly pulseless, who in a few days was wholly recovered, and who survived the attack no less than eleven years, having reached the advanced age of one hundred and three, and with a power to take out-door exercise up to a period very near her death.

"In some cases, it was taken in quantities the most considerable, and which nothing but the imminency of the danger from the disease, and the experience of its harmlessness, could justify. By one man, Vaughan, a tramp, who was admitted into the hospital in the stage of collapse in its most malignant form, and who only emerged from it slowly at the end of three days, the immense quantity of five hundred and eighty grains of Calomel was taken, and who, notwithstanding, without either fever or ptyalism following, was perfectly well, and ready to leave us in a week."

Dr. Ayre has published during the present year the following additional communications on the same subject:

1. On the Error of Certain Published Opinions concerning the Nature of the Malignant Cholera; and on the Treatment of that Complaint in the Collapsed Stage by single-grain doses of Calomel. (*Lancet*, March 10th, 1849, p. 260.)

2. On the successful Treatment of Asiatic Cholera—by small and frequently repeated doses of Calomel. (*Lancet*, 11th August, 1849, p. 145.)

3. Treatment of Cholera, by small and repeated doses of Calomel. (*Lancet*, 22nd September, p. 327.)

Our space will only permit us to refer our readers to the communications themselves, and to make a few remarks on the extraordinary plan of treatment which they advocate.

Dr. Ayre says, "When gentlemen writing on the subject of Cholera inform us that they give large doses of Calomel in the stage of collapse, with a view to its being absorbed, and of acting on the disease through the circulation, and even object to the use of small and frequently repeated doses, they wholly overlook the important fact, that pending the duration of the stage of collapse no absorption takes place."

We perfectly agree with Dr. Ayre, that the Calomel is not absorbed during the stage of collapse; but we cannot imagine what advantage can be derived by administering it in the manner recommended by him. If, then, it be not absorbed, how does it act? The following extract from his paper in the *Lancet* of 11th August, shews his idea of the pathology of Cholera. "I have always held and acted upon the opinion, that the abeyance of the vital powers, as shown in the shrunken features and cold and livid surface, and also the cramps, and, indeed, every one of the appalling symptoms of the complaint, are dependent upon a venous congestion of the liver, produced by its interrupted secretion, and that it is by means that will restore that secretion, that the whole of its symptoms is to be removed." We confess ourselves utterly unable to divine how unabsorbed Calomel can restore the secretion of bile. Its mere mechanical presence in the stomach would surely give it no advantage over any other substance; and Dr. Ayre himself gives us no further explanation than is contained in the above extract. Our opinion of the cases in which Calomel has been used by Dr. Ayre and others with alleged success, is, that in some there has been a spontaneous cessation of the collapsed condition, and that, in many, recovery is to be attributed to the remedies employed in conjunction with it—such as opium, internal stimuli, and the application of warmth externally. As an example of this, we quote the following extract of a communication by Dr. George Burton Payne, of Warwick-square, (*Lancet*, Sept. 8th, 1849). This gentleman discountenances any attempt to establish a rational treatment, and says:

"I have myself much pleasure in bearing testimony to the success of the plan proposed by Dr. Ayre, of Hull, which I have steadily pursued (occasionally modified), and have lost but one patient (a boy) throughout the whole epidemic, although I have had under my care very many cases, in all stages of the complaint. But one remarkable recovery induces me to send you a brief account of the case, which, if you think worthy a place in your practical journal, is very much at your service.

"Mrs. B——. Aug. 23. Came over from Lambeth to Westminster, to see some friends, when she was suddenly seized with vertigo, inability to stand, followed by vomiting and purging, and severe abdominal pain. She immediately took a mixture composed of spirit of turpentine, and the tinctures of capsicum and opium (dispensed to some receipt), which had aggravated the symptoms, and I found her, about eight o'clock in the evening, vomiting incessantly the rice-water ejection, with violent cramps in the feet and legs, constant involuntary purging, etc. Ordered sinapisms over the whole abdomen, hot bottles to feet, etc., and to take chloride of mercury, two grains every five minutes, followed by tincture of opium, five minims; compound spirit of ammonia, six minims; water, one drachm.—At nine o'clock, sickness, purging, and pains, much relieved; a genial heat and gentle perspiration breaking out over the entire surface of the body. To continue chloride of mercury, one grain every half-hour, alone.—At three A.M., was called up and found the woman cold, livid, pulseless at the wrist, the legs completely flexed upon the body. Had so far improved, up to twelve o'clock, as to be able to set up in bed, and had then been persuaded to take a glass of brandy. The sickness and pains almost immediately returned, and continued with increasing violence until the time I was called up. Although believing the case to be hopeless,—so great was the prostration,—I gave her ether, one drachm; tincture of opium, ten minims (one dose); with chloride of mercury, two grains every five minutes, placed upon the tongue without any*thing else.* *This* was done punctually for two hours; and at seven o'clock I

had the satisfaction of finding my patient sleeping, and in profuse perspiration: in a word, reaction was completely established. She took a grain and a half of calomel every two hours throughout the day, and with attention to diet alone, recovered, without any ill effects from the quantity of chloride of mercury taken."

In many other cases, we think that the recovery is to be attributed to nature; that the cessation of the cramps, collapse, etc., and the restoration of the secretions, occurred in a manner perfectly *analogous to the cessation of the cold stage of an ague*. The non-occurrence of consecutive fever after the use of Calomel is not, we think, a consequence; and its intensity after the use of stimulants is similar to what has been observed in fevers of a remittent and intermittent character, in which the too free administration of stimulants during the cold stage has been followed by an exacerbation of the symptoms of febrile reaction.

That Cholera is localized in the liver, as Dr. Ayre imagines, is entirely opposed to facts, and to the opinions of numerous careful observers, who have had extensive opportunities of studying the disease. The admirable papers of Dr. James Bird, published in this Journal, as well as the observations of Raikem, Lévy, and many others, all tend to show the *general* suspension of the secretions. In Dr. Graves' *System of Clinical Medicine* (1848), p. 417, we find the following pertinent remarks: "The principle on which the Calomel treatment was employed in Cholera, arose from almost constantly observing that there was a total deficiency of bile in the stools. Soon after the supervention of an attack, the alvine discharges were observed to be white, and without the slightest tinge of bile; and on this very remarkable symptom, practitioners dwelt almost exclusively, thinking that the patient's only chance lay in restoring the secretion of the liver. Now it is obvious that the absence of bile in the stools is no more a cause of the disease, than is the deficiency of urea in the kidneys, or of serum in the blood. Viewing the disease in this light, it would be just as reasonable to give a diuretic to restore the secretion of the kidney, as to give Calomel to produce a flow of bile.'

We have selected Dr. Ayre's observations as the basis of our observations on the use of Calomel in the collapsed stage of Cholera; and we must refer our readers to the contemporary journals for the statements of others, who think they have employed his plan successfully. Many of them, however, like Dr. Payne, greatly modify the treatment by the addition of opium and stimulants. Dr. Ayre is evidently carried away by his hobby. He imagines he has done wonders with Calomel; yet the enormous mortality from Cholera at Hull (which he attempts, in his letter of September 22, to explain by "the unsurpassed malignity of the disease"; by "the utter inadequacy of the medical gentlemen to give proportionate attention to the cases"; by "the trust which the patients place in the nostrums retailed by druggists; and by the adoption, by many practitioners, of stimulants and opium, in opposition to the Calomel treatment"), as well as the non-success of his treatment, as tried in other places, tend to show that it must not be depended on. Dr. Hughes, of Guy's Hospital, in the *Lancet*, *Medical Gazette*, and *Medical Times* of September 22, very pertinently remarks, that if the correctness of the assertions made by Dr. Ayre, be admitted, "there must be a mistake somewhere: either the disease is much more virulent, and therefore less controlable, in London, than it is in Hull and other places, in which the small(?) doses of Calomel are found to be so wonderfully efficacious; or there must be some other source of fallacy to be discovered."

While we consider that no reliance can be placed on Calomel in the collapse, we are far from decrying its judicious use in other stages of Cholera. Dr. Bird recommends it in the premonitory stage, in combination with quinine and astringents (see p. 842); and Dr. Alexander, in his Remarks on the Cholera, as it exists in Holland (*Lancet*, July 21, p. 69), says: "In the stage of reaction, calomel in grain doses, with or without laudanum,

according to the state of the bowels, or the abdominal pain, is then most relied on, and given, with the best effects, with cold wet cloths to the forehead." We believe it to be *one* of the several remedies which may be advantageously employed in this stage, to assist in the restoration of the secretions when the organs are regaining their functional energy; but when the functions are suspended, as in the collapsed stage, we hold it to be useless. We must also remember that when reaction sets in, the stools may become bilious without the aid of mercurials.

We cannot better end these remarks than by inserting the following communication, made by D. W. LINDESAY RICHARDSON, of Edinburgh, to the *Medical Times* of 22nd September :—"Entering lately on an extensive charge of Cholera-patients, under Dr. WILLIAM ROBERTSON, of this city, and impressed by the reported beneficial results of Dr. AYRE's treatment of the disease, I deemed it a duty, alike to those entrusting their lives to my care, as to the advocates of this plan, to put it at once in operation. It has been my endeavour to fulfil, to the letter, the plan proposed, and to carry such out I have used every possible exertion. Calomel was given in two-grain doses every ten minutes, accompanied by half, one, or two drops of the tincture of opium. I sat for nights at the bed-side noting every change, and, when I did not administer it myself, I have every reason to place confidence in those to whom I entrusted it. The results, as seen by the accompanying table, are far from satisfactory.

"We have these eighteen cases of pestilential Asiatic, or malignant Cholera; selected, I confess, not, however, on account of the hopeless or moribund condition of such, but with a view to exclude any of a dubious nature. All must be aware, that during the prevalence of an epidemic like the present, many solicit admission into hospitals labouring under presumptive Cholera; some may be cases of cholerine, but such I hold to be as distinct from pestilential Cholera as ephemeral fever is from typhus, and as little entitled to a place, when the treatment is under consideration. The treatment in question, then, was adopted in the first eighteen unequivocal cases which presented themselves.

No.	Age.	Sex.	Passed into stage of reaction.	Made Water.	Mouth affected	Lived after admission into Hospital.	Amount of Calomel administered.	Cured.	Died
1	28	F.	—	—	—	24 hours.	100 grs.	—	1
2[1]	24	M.	1	1	1	7 days.	300 „	—	1
3	28	F.	—	—	—	16 hours.	120 „	—	1
4	14	M.	—	—	—	15 „	120 „	—	1
5	21	F.	—	—	—	7 „	60 „	—	1
6	28	F.	1	1	1	—	228 „	1	—
7[2]	27	F.	1	1	1	9 days.	388 „	—	1
8	40	F.	—	—	—	24 hours.	150 „	—	1
9	10	M.	1	—	1	3 days.	196 „	—	1
10	39	M.	—	—	—	2 „	220 „	—	1
11	40	F.	1	—	1	4 „	188 „	—	1
12	40	F.	—	—	—	16 hours.	168 „	—	1
13	47	M.	1	—	—	3 days.	164 „	—	1
14	39	F.	—	—	—	9 hours.	70 „	—	1
15	11	M.	—	—	—	15 „	140 „	—	1
16	39	F.	—	—	—	15 „	155 „	—	1
17	40	M.	1	—	1	4 days.	142 „	—	1
18	38	M.	—	—	—	10 hours.	80 „	—	1

[1] This patient survived the Cholera, but died of pneumonia.

[2] This patient survived the Cholera, but died of peritonitis, probably connected with recent delivery.

"1. I have arranged the cases according to their state on admission. No. 16 will be seen to be one in which the disease was but commencing, and in which, from my experience of other plans of treatment in such cases, might, I have little doubt, have been cut short. 2. Three, in which the affection of the mouth announced the systemic action of the medicine, died. 3. Two who survived Cholera died, one of pneumonia, the other of peritonitis (the former, undoubtedly), developed while the system was under the influence of the medicine. 4. Four, who passed through the stage of re-action, died without having voided urine. 5. In eleven there was not the slightest attempt at re-action. 6. Taking, then, the eighteen, one only was in life at the expiration of this plan of treatment.

"After such a result it can hardly be wondered that I cease to hope from the two-grain doses of Calomel."

AFFECTIONS OF THE MAXILLARY BONES AMONG LUCIFER-MATCH MAKERS.

THE VIEWS OF DR. HELFT.

Dr. Helft, of Berlin, considers, from his investigations of these affections, that they are not attributable, as supposed by some pathologists, to a peculiar and special disposition in these bones to the morbid influences of the vapour of phosphorus. He is of opinion that they originate in periostitis, a view which, in his judgment, receives support from the observation of similar effects as the consequence of the same morbid conditions of the gums produced by other irritating substances. This form of periostitis, whether it be traumatic or rheumatic, or whether it arise from any other cause, at length implicates the substance of the bone, obstructing or destroying its vessels by exudation or suppuration; and thence follows necrosis with those pathological conditions which have been so fully described by Dr. Giest, of Erlangen, although this author has not assigned them to periostitis as the immediate cause.

Dr. Helft points out that those only among the workers in phosphorus who are of a scrofulous or cachectic habit, and in whom a morbid state of the gums, or alveoli, exists, are exposed to this particular form of disease, as these conditions necessarily render the periosteum more susceptible of the action of phosphorous vapours.

Dr. Helft concludes that rheumatism alone will not produce it, but that the same effects would occur in any other morbid condition of the gums, &c., if exposed to the irritant action of phosphorous vapour. An analogous effect is produced by other irritating substances, as is shewn in the almost endemic prevalence of periostitis of the alveoli in eastern countries, which partly arises from the use of tobacco, and partly from want of cleanliness, combined with poorness of diet.

The experiments of Bibra on animals show that phosphorous vapour is capable of causing bronchitis, pneumonia, gastritis, periostitis, exostosis, and necrosis. Professor Rigler, of Constantinople, attributes the endemic prevalence of the disease of the mouth to the employment of strong soap, to cleanse the mouth and gums, by the Turks, and of late by other Orientals. Dr. Rigler also informs us that the same disease prevailed extensively among some Albanians, who were taken from their mountain homes, and subjected to military discipline, with an entire change of diet. That the disease had arisen from these causes was rendered evident, by its complete arrest on a return to their usual diet, by the prohibition of tobacco, the frequent cleansing of the mouth with a very dilute solution of mineral acid, cauterising the gums with lapis infernalis, and the adoption of other remedial measures.

From the preceding facts, it is obvious that a diseased condition of the jaw-bone may arise from other causes than the irritant action of phosphorous vapour; and, whatever may be the ultimate decision with regard to Dr.

Helft's theory, it is undoubtedly of value, as pointing to the due hygienic measures for the prevention, and to the curative means to be adopted for the arrest, of the disease.—*Casper's Wochenschrift*, Aug. 19, 1848, and *Med. Gazette*, May 11, 1849.

MATERIA MEDICA AND PHARMACY.

HELONIAS DIŒCA (UNICORN PLANT).

In the *Boston Medical and Surgical Journal*, Dr. Braman states that, for nine years, he has been in the habit of using preparations of this plant as a remedial agent. He considers it peculiarly applicable in such affections as have their origin in atony of the generative organs of both sexes,—but particularly the female. "In leucorrhœa", he says, "I consider it invaluable. I use it with a confidence I *attach to no other medicine*. Under its influence the patient, whose life has been almost a burden, soon revives. Her uncomfortable sensations vanish, and, ultimately, an entire recovery of health and strength is established." It may be given in the form of powder, tincture, or syrup; but the latter is the most eligible. The *doses* which Dr. Braman recommends, are, of the *powder*, one drachm and a half; of the *tincture*, one fluid drachm; of the *syrup*, three fluid drachms. These doses are to be taken thrice a day, half an hour before the ordinary meals; and, according to the urgency of the case, the quantity administered may be increased, if the patient bear it well. In irritable stomachs, nausea is sometimes produced; and when this occurs, the dose must be diminished.

The dose of the powder may serve somewhat as a guide to the preparation of the syrup and tincture; but the formulæ ought to have been given by the author. In place of this, the reader is referred to 481 Washington-street, Boston, for the articles themselves. This has a suspicious appearance, and inclines us to fear that the main object of the doctor has been, to send customers to the druggist, and not to enlighten his brethren.

A HINDOO REMEDY FOR CONJUNCTIVITIS.

Take a flat, rusty piece of iron, and a lump of alum about the size of a nutmeg. The alum is to be melted on the iron over a lamp, then add the juice of half a small lemon, or a little juice; rub together and apply to the lids while warm, morning and evening, for three or four days.

This composition is apparently the citrate of iron and alumina.

CANTHARIDAL COLLODION.

Mr. Hisch, a pharmaceutist, of St. Petersburgh, recommends the following as a vesicatory, when it is necessary to place one upon a situation where it is liable to be easily displaced by the movements of the patient. We have, generally, in such cases, been in the habit of ordering the cantharides plaster of the Pharmacopœia to be spread on the common adhesive plaster: but Mr. Hisch's plan seems a better one.

The Cantharidal Collodion is thus prepared:—Exhaust, by the displacement process, one pound of coarsely powdered cantharides by one pound of sulphuric ether and three ounces of acetic ether: in this way is obtained a saturated solution of cantharides, along with the green animal fatty matter. Dissolve twenty-five grains of cotton-powder in two ounces of this liquid, and preserve it for use, in well stoppered bottles. When a blister is required, it will be sufficient to smear with this fluid the surface to be vesicated.

REPORTS OF SOCIETIES AND ACADEMIES.

WESTMINSTER MEDICAL SOCIETY.

Session 1848-9. October 21, 1848.

John Webster, M.D., F.R.S., President, in the Chair.

President's inaugural address. In the course of his remarks, Dr. Webster made the following observations with reference to the health of the metropolis. "With regard to Cholera, it is interesting to know that, notwithstanding the anxiety now prevalent, it hitherto has not made much progress in the metropolis; and that if its present fatality be compared with other epidemic maladies, we have as yet really not much cause for alarm; for during the six weeks, ending on Saturday, the 16th of October, 1847, the number of fatal Cholera cases, in London was twenty-six; whilst the total number of deaths caused by the same malady, throughout the entire metropolitan population, during the six weeks ending on Saturday last, the 14th instant, amounted to sixty-seven, being, as yet, only a little more than double the mortality by Cholera during the same number of weeks in the previous year. Compared with this, it is instructive to mark the different results observed in another epidemic now prevailing in London with great severity, but which does not cause anxiety to the extent it deserves—I mean Scarlatina. Hundreds of victims have been recently sent to an untimely grave by this pestilence. In the Registrar-general's tables it is stated, that during the six weeks terminating on Saturday, the 16th of October, 1847, 302 individuals died in London from Scarlatina; whereas, during the six weeks ending on Saturday last, the 14th instant, as many as 972 persons have sunk under that virulent complaint; or upwards of quadruple the average mortality by the same disease in the previous five autumns. Although Scarlatina is a disease of frequent occurrence in this country, and although it annually carries off thousands of individuals, hitherto, very few sanitary measures have been put in force by public bodies for preventing its approach, notwithstanding its highly infectious nature. But this is only another illustration of the prevailing disposition, in the minds of many persons, to view whatever is familiar with indifference, whilst anything new or uncommon is sure to attract attention.

Epidemic influenza was fatally prevalent in the metropolis at the early part of last winter, 1213 persons having died of it during the six weeks ending on Saturday, the 8th of January last. At the same time, the total deaths registered, from all causes, were increased to an extraordinary extent, being so high as 2454 in one week, and 2416 in the subsequent—instead of 1046, the ordinary weekly average. Contrasted with this plague-like mortality, it must be gratifying to hear that London, comparatively speaking, is not at present unusually unhealthy, notwithstanding the actual presence of Cholera, the great malignity of Scarlatina, and the prevalence of Typhus, by which disease 424 persons have died in the metropolis during the last six weeks, instead of 260, the averaged deaths by Typhus of a similar period, during the five preceding autumns. Such facts are important; and although the Cholera now occasions considerable anxiety, the total deaths from all causes, throughout the metropolitan population, have actually diminished, especially during the last fortnight, notwithstanding the prevailing epidemics. This is proved by the mortality tables, which show that instead of the weekly average of 1154 deaths, as in the last five seasons, during the week ending on Saturday, the 7th October instant, 1005 persons died from all causes in the metropolis, and only 991 in the week terminating last Saturday, the 14th: thus making a diminution of not less than 312 deaths in the two weeks now referred to,

being an excess of fifteen and a half per cent. last year, over the two corresponding weeks of the present season."

Apparatus for relieving the Breast, when over-distended with milk, was exhibited by Mr. Hancock. It consisted of a very stout bottle, surrounded by a ring, with an ivory shield, which firmly fitted the nozzle. The bottle having been filled with boiling water, to heat it, is emptied, the ivory shield replaced, and the mouth-piece placed against, but not pressed upon, the nipple,—which would be immediately drawn out, as well as some of the superabundant milk.

Pathology and Treatment of Cholera. By Francis Hird, Esq. Mr. Hird dwelt upon the differential diagnosis between the malignant or Asiatic Cholera, and the ordinary autumnal affection observed in this country. The symptoms by which the malignant form may be recognized, he stated to be,—the absence of bile, both in the matters vomited, and discharged from the bowels—the suppression of urine—the cold breath—the veiled unearthly voice—the rapid sinking of the heart's action—and the great fatality of the disease. In speaking of the mode of invasion, the author stated that, as a rule, the disease is preceded by an attack of diarrhœa, which may continue for an hour or two, or may be protracted to one, two, or three days, before the symptoms characteristic of the pestilential malady develop themselves. This diarrhœa should never be overlooked, and the absence of pain was no proof that it would not terminate in Cholera. He divided the disease into *three stages*,—the first, diarrhœal or premonitory; the second, or algide stage, marked by great depression, and by the peculiar dejections, of a watery character, loaded with flakes of whitish matter, which under the microscope appear to be composed of cells, rather larger in size than exudation corpuscles, of scaly epithelium, of a few blood corpuscles, and of other matters, differing in each individual case, according to the severity of the symptoms; and the third stage, indicative of reaction.

The author stated that, although the disease did not usually spread from person to person so rapidly as scarlatina, small-pox, or measles, it was very analogous, in reference to its mode of communication, to typhus fever and erysipelas. A patient labouring under typhus, when conveyed into a good-sized and well-ventilated apartment, would rarely communicate the disease to the attendants; whereas, the same patient, placed in an unfavourable locality, and surrounded by poverty and distress, would very probably spread the disease to those in attendance. *Cholera he believed to be contagious*, and that it had been traced to spread in accordance with the ordinary laws of contagion. The frequent immunity from the disease of the professional and other attendants, was no proof of the non-contagious nature of the disease; for the same objection might be adduced, against the contagiousness of any of the acknowledged infectious diseases. The leading symptoms of the disease, the mode of its fatal termination, and more especially the spontaneous favourable termination occasionally observed, under every variety of treatment, all tend, in the author's opinion, to assimilate it to the effects of poisons on the animal economy. However great the obscurity may be which overhangs the question, respecting the generation or exciting cause of Cholera, most satisfactory evidence can be adduced to prove, that many circumstances predispose to its influence. Persons who exceed in spirits, wines, fruits, or unwholesome food—the debilitated from any cause—the poor, who live in badly drained, and ill-ventilated residences—and especially those who have suffered from previous diarrhœa, rarely escape when the pestilence prevails.

The post-mortem appearances, which the author had observed in several fatal cases of the disease, were detailed. In those who died during the algide stage, the body had undergone great diminution in bulk, and become almost as emaciated as a body in the last stage of consumption; the peculiar blue colour of the skin frequently disappeared shortly after death; the tempera-

ture of the surface of one or two bodies increased for a short time after death. Quiverings of the muscles, and sometimes even distinct movements of the limbs, took place for an hour or two after all signs of animation had departed. The shrivelled appearance of the hands resembled those of washerwomen. In the chest, in most of the cases, slight effusions of blood were found on the heart, and on the pneumogastric and sympathetic nerves. Dark viscid blood filled the right side of the heart; in one or two instances coagula were found. The left cardiac cavities were generally nearly empty, containing only a small quantity of thick, black blood. The aorta and its large branches were also nearly empty. The lungs and pulmonary arteries were gorged with very dark, treacly-looking blood, and spots of ecchymosis were observed, in two or three of the bodies examined, between the pleura and parenchyma of the lungs. In the abdomen there was very great venous congestion. In the cava, iliac, and portal veins, the blood was black and tenacious. The liver was congested, and the gall-bladder distended with green or dark yellow bile, of a ropy character. The mucous glands of the intestines stood out in bold relief; the agminated and solitary, as well as those of Brünner, being enlarged; and the epithelium, in many of the most severe cases, was completely stripped off the mucous membrane. The kidneys, and the whole genito-urinary mucous membrane, were greatly congested, and the bladder much diminished in size. On examining the brain, medulla spinalis, and their envelopes, in the cases which terminated fatally during the algide stage, with the exception of venous congestion, there was found no particular morbid appearances; whereas, when death had occurred subsequent to reaction, great vascular turgescence was observed, and in two cases in which coma had existed for some time, serum was found in the ventricles. From the appearances observed after death, from the mode of development of the disease, and from the peculiar character of the symptoms in its successive stages, the author concluded that the organic nervous centres are, if not primarily, at least consentaneously, affected with the blood, and that all remedies should be prescribed with reference to this view of the pathology of the disease. He considered it unphilosophical and irrational to apply our remedial agents, with a view to check one or other of the isolated symptoms which manifest themselves in the progress of the disease.

Treatment. In order to attain even moderate success in the treatment, the author considered that a comprehensive view should be taken of the disease, and that special attention should not be directed to any one particular symptom which may show itself during life, or to one particular lesion which may be discovered after death. The disease should not be located in any particular organ; but the leading symptoms during life, and the prominent morbid lesions most frequently observed after death, should be carefully noted, and the effects of medicines, in modifying the severity of the symptoms, watched most attentively.

Cholera being essentially a disease of collapse, three grand objects are to be attained, viz.: the rousing of the vital energies, so as to enable the patients to resist the depressing influence of the morbific poison; the arrest of the frequent evacuations from the bowels; and the restoration to a healthy condition of the secretions and excretions. In the *premonitory diarrhœa*, the author had found of service scruple doses of the compound chalk-powder with opium, combined with spirits of ammonia and cinnamon, in the infusion of cusparia. This medicine, with small quantities of brandy at intervals, would frequently prevent the further development of the disease. When the evacuations were watery and contained little bile, he gave five grains of calomel and half a grain of opium immediately, and followed this up with a grain of calomel, and two grains of cayenne, every ten minutes, quarter, or half hour, in proportion to the severity of the symptoms. He considered that the secretions were more effectually restored by these measures, than by the scruple doses of calomel and two or three grains of opium, which some

practitioners had recommended, and that the rapid depression which frequently followed the use of the latter, was rarely observed under the former treatment. When the symptoms increased in violence, and were not checked after three or four doses of the above, and the characteristic evacuations and other symptoms, which denote the approach of the algide state of the disease, had set in, he found the greatest amount of benefit from the use of emetics of mustard and salt, the application of mustard cataplasms over the region of the heart, and along the course of the pneumo-gastric nerves in the neck; frictions to the extremities, chest, and abdomen; the free use of diluents; turpentine epithems to the abdomen; and a liberal supply of warm clothing and heated air. After two or three full vomitings had roused the heart's action, and in a measure overcome the disposition to internal congestion, the author recommended acetate of lead, in doses of two grains, every half hour. His experience bore out the favourable opinion formed of this remedy by Dr. Graves, of Dublin, who introduced it to the notice of the profession in 1832. In the intervals between each dose, ammonia in five or ten grain doses ought to be given; or from five to ten drops of chloroform on sugar. The vapour of chloroform had been recommended by some physicians to allay the violence of the spasms. The author stated that he had not had an opportunity of trying its effects, but did not expect from its *modus operandi* on the healthy body, that it could do more than simply allay the pain in Cholera, and might have injurious effects on the action of the heart and nervous system, if given in a dose sufficient to produce anæsthesia.

By the above measures, the functions of the heart and lungs were maintained—internal congestion, as far as possible, prevented—and time thus afforded for the system to overcome the effects of the morbific poison. The acetate of lead, he found, had more power in checking the constant drain from the system of the elements of the blood, than any other remedy that had been suggested. The treatment by immense quantities of calomel, with the view of forcing the action of the liver, he believed was founded on an erroneous view of the disease. The want of action in the liver was not the cause, but the consequence, of the disease, and the deficiency of bile not more important than the deficiency of urine. Both secretions are restored so soon as the virulence of the disease is overcome; affording certain evidence of returning nervous force and healthy action. During *reaction*, the treatment applicable to fever was called for. The abstraction of blood, generally, was almost equivalent to the abstraction of life, and ought never to be resorted to except in young patients, who, previous to the attack, had been in robust health, and when the blood had not been deprived, by frequent and long-continued evacuations, of a large quantity of its serous and saline constituents. Its beneficial influence, even in the class of cases mentioned, was very questionable, and was purely of a mechanical character. The subsequent management of the disease required quinine, and similar treatment to fevers from miasmata. *Large doses* of opium, brandy, and other powerful stimulants, the author objected to. When given too freely, they interfere with the restoration of the functions of the several depurating organs,—they increase the liability to consecutive fever:—and coma is much more frequent when they have been largely administered.

November 4, 1848.

John Webster, M.D., F.R.S., President, in the Chair.

The Case of a Man who shot himself in the Mouth with a Pistol, was narrated by Mr. Wade. The lower jaw was fractured near its centre, and the lips and cheeks cut into riband-like strips; the edges of the wound were black and jagged, the two principal lacerations extending from the angles of the mouth to the mastoid processes: the mucous membrane of the whole interior of the mouth and fauces was black and pulpy, and blood freely oozed out, but no open blood-vessels could be detected. It was discovered

that the pistol had only been loaded with powder. The fractured ends of the jaw were secured *in situ* by strong ligatures passed round the teeth, and the wounds of the cheeks and lips were united by stitches; a light bandage was applied, and ice employed, and subsequently a piece was placed in the mouth, which checked the hæmorrhage. The next day the patient had considerably improved, and was received at the Westminster Hospital, where, while taking some beef-tea, he fell backwards and expired. Mr. Wade supposed that spasm of the glottis was the cause of his death.

On Scarlatina. By Mr. I. B. Brown. The author pointed out the treatment he pursues:—His first care is to freely apply a stick of lunar caustic[1] to the tonsils and fauces, even though ulceration be absent, in order altogether to check the formation of ulcers; or if they be already formed, to accelerate their healing. At the same time, he applies to the throat, externally, some stimulating application, or poultices. The medicine first given is a dose of calomel, followed shortly by a dose of castor oil. The bowels having been acted upon, a course of treatment is commenced, which may be described as of a stimulant character, and such as is indicated by the view of the pathology of the disease entertained. The patient is strictly kept in bed, and sponged with tepid vinegar and water, the hangings about the bed and room removed to facilitate ventilation, and the floor sprinkled with solution of chloride of lime, or with Burnett's Solution. But the distinctive part of the author's treatment consists in the administration of dilute acetic acid, in doses of half a drachm and upwards, according to age, given in syrup or other convenient vehicle. This medicine is followed by the exhibition of stimulants, as wine or brandy, given with arrow-root, gruel, or with any diluent, together with beef-tea, or veal, or chicken-broth. These stimulant and supporting hygienic measures are, as a rule, commenced on the second day of treatment. The state of the throat is diligently attended to; the tonsils and fauces being sponged two or three times a day with a strong solution of nitrate of silver (ten grains of the salt to one ounce of water). This application induces a healthy action in the parts, and brings away the viscid mucus which impedes respiration and deglutition. Not unfrequently, the caustic solution is advantageously projected by a syringe, through the nostrils, to the upper and back part of the pharynx, to remove the acrid, and often sanious, discharge. Recourse to opiates or sedatives is generally necessary to produce sleep, or allay irritation. Tonics may be usefully combined with the acetic acid mixture; and the exhibition of ammonia is indicated where great depression exists.

Although unable to state the *modus operandi* of acetic acid, Mr. Brown believes it to be a direct stimulant to the skin and kidneys, tending to remove the existing congestion of their vessels. As soon as these excretory organs can be made to act, he considers the danger of scarlatina is passed—*i.e.*, should no extraneous accidental circumstance interfere.

When death takes place, it appears to the author to depend either upon the influence of the poison on the brain and nervous system generally, as seen where coma and delirium supervene in the course of the first three days; or on a mechanical impediment to respiration, from the condition of the fauces, together with the consequent circulation of imperfectly aërated blood, and, probably, the constant re-imbibition of the poison into the circulation, by the necessary passage of the inspired air over the diseased mucous membrane.

Coma, or delirium, when present, instead of indicating the employment of venesection, the author believes should be treated by the administration of stimulants and sedatives; and he lays much stress upon the necessity of

[1] With struggling children, is not a strong solution, applied by means of a camel's hair pencil or little mop, much safer? Editor

maintaining an uniform temperature during the whole course of the disease; as any check to the efflorescence may give a fatal turn to the malady, or any exposure to cold, in an after stage, may be followed by *dropsy*. Of the last-named sequela, not one case, in 253 seen by him, occurred.[1] Desquamation was found to be favoured by the use of the warm bath; and until that process is completed, the danger of Scarlatina cannot be deemed as past.

In a concluding observation, Mr. Brown remarked that the specific stimulant influence of the acetic acid over the skin, might be referred, perhaps, to the chemical composition of acetic acid, an hydrated oxide of a radiule, acetule, which in its chemical relations approaches nearly to ethule, the hypothetical radicle of ether.

NOVEMBER 11, 1848. FRANCIS HIRD, ESQ., V.P., IN THE CHAIR.

DISEASE OF KIDNEY: OBSTRUCTED EMULGENT ARTERY; ALBUMINOUS URINE: AND CONVULSIONS. By DR. WOODFALL. A female, aged thirty-eight, who had been subject, for many years, to disorder of the digestive organs, in March 1848 suffered very severely from headache and sickness, but her health improved greatly during a subsequent residence in the country. Early in September, soon after her return to London, she was seized with a violent attack of epistaxis, which was with difficulty controlled, and from which she never fairly rallied. Dr. Woodfall saw her first on October 3rd, and found her very pale, greatly emaciated, and suffering from obstinate vomiting and extreme tenderness in the left hypochondriac region. The urine was pale, clear, and acid; it deposited an abundance of albumen, on the application of heat; and was of specific gravity 1008. The vomiting and tenderness were soon relieved, but a convulsive attack took place shortly afterwards; the sensorium became affected, the countenance assumed a peculiarly wild and anxious look, though, on the attention being roused, she was able to understand and answer questions. About ten days before death, the conjunctivæ of both eyes became injected with blood; there was a return of epistaxis, pale coloured blood continuing to ooze from the nose for some hours; and there was hæmatemesis. The convulsions recurred at frequent intervals, and after lingering for a long period, death, preceded by coma, took place on October 29th. The urine was usually not deficient in quantity, though, on two or three occasions, none was voided for nearly twenty hours; it became neutral, or even alkaline, but continued to deposit albumen, on the addition of nitric acid; and the last time he examined the specific gravity, about a fortnight before death, it had fallen to 1005. On *examination after death*, the kidneys were found to be smaller than natural, pale and flabby; the left (the one exhibited), was smaller than the right. The emulgent artery, where it entered this kidney, was of cartilaginous hardness, and the vein was partially blocked up by a firm mass of fibrine. The divided arteries of the mesentery were rigid and gaping. The liver appeared natural in structure. The gall-bladder was of a deep purple hue, and firm and flesh-like to the touch; on slitting it open, it was found to be filled with a firm coagulum of blood, partially adherent, the source of which was extensive ulceration of the mucous membrane of the fundus and body of the organ. The other viscera of the abdomen presented no unnatural appearance, and, unfortunately, time did not permit him to examine those of the chest and brain. On reviewing the case, there could, he thought, be no doubt that the disease of the kidneys was of long standing. Whether it was occasioned by the condition which appeared to prevail in the arterial system, or whether both were the common result of faulty nutrition, it is not easy to decide; but he considered the latter the more probable explanation. The hæmorrhagic tendency which prevailed during the last two months of the patient's life was very remarkable.[2]

[1] Most extraordinary. EDITOR.

[2] This case affords a good illustration of toxæmic convulsions dependent on renal con-

Dropsy, dependent upon Cardiac Disease: Discharge from the Leg. By Mr. Nunn. The integument of the parts was studded with tubercles of about the size of moderately large split-peas, while the whole of the leg was very much distended with serum. The tubercles excreted, from their surfaces, a fluid in great abundance, and it was observed that, when the discharge of this fluid was copious, the chest symptoms remained in abeyance. The patient (a female) had been subjected to a great variety of treatment, by various medical men; and by some the disease was considered a species of Elephantiasis.

Mr. Nunn put forward the opinion, that the tubercles were the papillæ of the skin, hypertrophied and transformed into an excerning apparatus, the office of which was to rid the limb of effused fluid. A cast of the lower part of the leg was exhibited.

Dr. Ogier Ward related a case of Sudden Death, presenting some unusual post-mortem appearances.

Mrs. H., aged fifty-three, stout, but not florid, and liable to convulsive fits, had an attack resembling Angina Pectoris, while walking home. She had had an attack in church three weeks previously. Being taken to a medical man, her face was noticed to be pale, the eyes staring, the neck distended, but the veins not prominent; she complained of pain passing from her heart to her back, and gasped for breath; clear froth flowed from her mouth; she stretched herself out and died, the mouth being drawn to one side.

The medical man attempted to bleed her, but from both arms could only get a few tea-spoonfuls of thick black blood. On being laid out, her stays were found so tight that the lace could hardly be cut; but immediately this was done, the distortion of the face ceased, the left arm burst out bleeding, the blood was red and florid, and when, after great difficulty, the flow was stopped, the right arm began to bleed; previously to this a slight flush had been noticed on the cheeks, and the layer-out fancied that the woman's hand closed upon her's; the countenance also became quite placid, so that some doubts were held as to the real occurrence of death. The body was, however, placed in a coffin, where the same appearances continued undiminished, and an inquest was held upon it the second day after death, florid red blood continuing to flow during both days. After the inquest the coffin lid was laid on, which caused the cheeks to become more coloured, and a perspiration to appear upon the cheeks and forehead. The right arm was now stiff and cold, but the body had previously remained warm, and the nose and lips never became stiff; frothy mucus continued to flow from her mouth, and blood to trickle from her arms. The coffin-lid was secured, and the body buried, three days after the inquest.

While she lay in the surgery, the medical man listened to the heart's action, but heard no pulsations, nor were any felt by her friends subsequently.

November 18, 1848.

John Webster, M.D., F.R.S., President, in the Chair.

Simultaneous Progress of Gout and Phthisis. By Dr. A. B. Garrod. The author was induced to bring this subject before the Society, as in a paper on phthisis, communicated last session, it was asserted that a gouty condition was inimical to the development of tubercular disease; and it was suggested that, for the purpose of preventing or curing the latter affection, an attempt should be made to produce a gouty diathesis; and even the internal administration of urate of soda was hinted at. Dr. Garrod spoke of his recent researches on gout, published in the *Transactions* of the Royal Med. and

gestion. Their character was in this patient indicated by albuminous urine during life, and established by the obstruction of the emulgent artery found on dissection. Dr. Cormack's papers, pp. 451 and 522, may be consulted. Had this patient been pregnant, the case would have (though wrongly) swelled the list of those who have perished from "Puerperal Convulsions." Editor.

Chirurg. Society, vol. xxxi, and described what he considered to constitute a gouty condition of blood—viz., the presence of an excess of uric acid, before and during the paroxysm, in acute gout; and as an almost constant accompaniment in those forms of the disease where tophaceous, or chalk-like deposits take place. If the gouty and tubercular diathesis were antagonistic, phthisis would never become developed in the inveterate forms of gout above alluded to. To prove the fallacy of the idea, the following Case was related:—A man, a painter, aged twenty-eight, a native of London (whose father and grandmother had suffered from gout), was admitted at University College Hospital, under Dr. Williams. He was of very intemperate habits; but until the last few years had had a sufficiency of food and clothing. From seventeen, he had suffered from what he termed "rheumatism," (gout?) but had no affection of the heart with it. He was of full habit, till about three years since, when he began to lose flesh and colour; without feeling particularly ill, and without having a cough. He was soon after seized with gout in both his feet and hands; tophaceous deposits formed; and he was confined to his bed for twenty-eight weeks. About two months after recovery, he was again attacked; and then had a severe cough, with greenish expectoration. The pectoral symptoms continued for about four months; the gouty, for two months longer. From this date, until admission into hospital, he was constantly suffering from chest affection and gout; hæmoptysis had occurred once; and deposits of urate of soda frequently came away from his joints. When admitted, he was pallid and emaciated; complained of pain in various joints arising from gouty inflammation; also of pain in his side, cough, and muco-purulent expectoration. Clear evidence was found of tubercular deposits in both lungs: at the apex of the left, a distinct cavity was indicated by pectoriloquy and cavernous respiration; during the remaining month of his life, the gouty affection continued to progress—now appearing in one part, now in another, and occasionally with the discharge of urate of soda from some of the joints. The thoracic affection also continued to advance, accompanied with hectic symptoms, increase of cough, and sharp pain in different parts of the chest, until he fell into a state of stupor, and so continued for a day or two, when death took place. *The post-mortem appearances* fully proved the accuracy of the diagnosis. At the apex of the right lung a cavity was found, large enough to contain a walnut; the rest of the lung was studded with scattered tubercles in different stages of development. The apex of the left lung was excavated to the depth of four or five inches, and the remaining portion was sprinkled throughout with grey tubercles. The heart was healthy. The liver had patches of soft tuberculous deposit on its surface. The kidneys were small, and many of the tubuli filled with a white matter, consisting of crystallized urate of soda, and uric acid. The spleen was enlarged. The mucous membrane of the colon was ulcerated in patches. The blood was found to contain a very large amount of uric acid, larger than Dr. Garrod had ever before obtained.

The rarity of the combination of Gout and Phthisis, was easily accounted for by the fact, that gout in general does not appear till after the age of forty, whereas tubercular disease is much more frequent before that period. It was very doubtful, whether a gouty condition of blood could be induced by the internal administration of urate of soda: so that granting that the antagonism of the two Diseases were proved, this treatment would be quite theoretical.

November 25, 1848.

Francis Hird, Esq., V.P., in the Chair.

Cancerous Deposit in the Clitoris, and in various tissues of the same Patient.[1] By Mr. Canton. The patient was upwards of sixty. The labia minora and inguinal glands were implicated. The bones, generally

[1] The preparations were exhibited.

were brittle, and some of the ribs especially so, where masses of scirrhus, embedded in the lungs near their surface, had become adherent to them. The lungs were emphysematous; a little turbid fluid was found in the pleural sacs. The liver, kidneys, and left crus of the diaphragm were also affected.

Remarks on the Statistics, Pathology, and Treatment of Puerperal Insanity. By John Webster, M.D., F.R.S. In 1091 curable female patients recently attacked by insanity, and admitted into Bethlem Hospital, during the last six years, 131, or one-eighth of the whole, were puerperal cases; thus showing that the malady is not unfrequent. More recoveries were reported in this, than in the other varieties of lunacy; 81 puerperal patients having been cured, or at the rate of 61.83 per cent.; whereas the average recoveries during the last twenty years, in all cases of insane females treated at this institution, was 53.67 per hundred. Hence, three in every five cases of Puerperal Insanity may be confidently expected to get well within a year. In regard to hereditary tendency to mental disease, 51 of the 131 patients were thus predisposed, or 39 per cent.; whilst 41 were suicidal, being at the rate of 31 in every 100. Both these peculiarities are of much importance in this malady, and materially influence the disease, its progress, and result. Respecting the total deaths in the 131 puerperal patients, the author reported that they amounted to 6, or 4½ per cent.; thus making the average rate of mortality nearly the same as in other species of insanity, taken collectively.

Three of the six patients who died were suicidal and hereditary; one was only hereditarily predisposed to insanity, but not suicidal; whilst two, it was reported, had neither of these peculiarities; and none were insane previously. In addition to these facts, the author also mentioned, that half the deaths occurred in persons who were not affected longer than fifteen days, the shortest period being eleven days; and that all were attacked by insanity within seventeen days after their confinement. In none of the dissections were any morbid changes observed in the abdomen, but the lungs always appeared to be diseased, as also the brain and its membranes. The details of an autopsy were then described, as illustrative of the diseased changes of structure frequently met with in puerperal mania; the principal morbid alterations being, turgidity of the blood-vessels of the brain and membranes; large bloody points on cutting the cerebral substance; slight serous infiltration of the pia mater, and considerable effusion of fluid into the fifth ventricle: adhesion and purulent ulceration were noticed in the left lung, with hepatization in other portions of that organ, and, in the right lung, partial pneumonia in the congestive stage.

Puerperal Insanity, in the author's own opinion, is both more frequent and fatal in the upper than the lower class of society; the suicidal and hereditary cases being less tractable, than the other forms of the malady. The melancholic cases proved more protracted, and less curable, than the other varieties; and that, although over-lactation seemed to be a frequent cause of insanity, it is generally very amenable to cure; and notwithstanding that the malady may arise oftener from parturition than from lactation, it comes on, relatively speaking, in a greater number of cases after weaning, than during the period of suckling. The disease more commonly attacks females between twenty and thirty, than at other periods; is more serious in single than in married women, mania being the most frequently observed; and that three cases in five usually occur before the fourteenth day after delivery; whilst the danger is always diminished, the later the period at which the attack comes on after parturition. Formerly, Puerperal Insanity was comparatively less frequent, but more fatal than recently. Dr. Haslam, for instance, reports that, during the time he resided at Bethlem Hospital, only eighty-five cases of Puerperal Insanity were met with in 1644 lunatic females admitted into that institution, being at the rate of five cases in every one hundred admissions. Again, Dr.

Burrows records ten deaths, besides one suicide, in fifty-seven cases, which came under his immediate observation, being more than quadruple the mortality mentioned by the author in the first part of this paper; whilst, according to Dr. Copland's experience, one out of every eight cases of puerperal mania usually terminates fatally.

Treatment of Puerperal Insanity. Considering cerebral irritation, combined with great exhaustion of the nervous system generally, to constitute the true character of this disease, and that it rarely, if ever, proves inflammatory, Dr. Webster thought depletion, or the use of strong antiphlogistic measures, very seldom admissible. Leeches appeared in some cases advisable; but even then, they should be applied with great caution, and their effects carefully watched. As a general maxim, the same principles ought to be followed, as in delirium tremens. Opium, camphor, ammonia, and aromatics, with some of the diffusible stimuli, proved excellent remedies, and ought to be chiefly relied upon. When opium fails to procure sleep—so beneficial in this, as indeed in every form of insanity—then conium, hyoscyamus, or Indian hemp, may be substituted. Mild purgatives, and sometimes cathartics, should be prescribed; but powerful drastic medicines are seldom advisable. Enemata are also useful, conjoined sometimes with turpentine. When the disease assumes a more chronic form, setons or issues in the neck, and counter-irritation may be employed. The shower-bath, from its strengthening influence, then acts beneficially; whilst tonic remedies, with more nutritious food, become necessary, and prove advantageous. Low diet is very often prejudicial to the insane, and it has been long remarked, that improved nutriment, especially in lunatics who have previously suffered privations, frequently becomes a powerful means for promoting recovery. In recent cases of Puerperal Insanity, when the circulation is accelerated, accompanied by evident congestion of the brain, leeches to the temples, and behind the ears, or blisters, might be applied, and afterwards cooling lotions, with ice to the head; whilst tartar emetic, or ipecacuanha, in nauseating doses, and digitalis, may be administered for the same object. Besides medical treatment, moral means, with judicious occupation and amusements, very often constitute effective adjuncts. The author narrated two Cases of Puerperal Insanity, one being affected with mania, the other with melancholia. The first (the maniacal patient), a single woman, aged twenty-one, whose child did not survive, had hereditary tendency to mental disease, but was reported as not suicidal. She was very noisy, incoherent, often much excited, frequently very wild, violent, exceedingly mischievous, used bad language, destroyed her clothes, and paid no regard to personal cleanliness. She took food voraciously, was very restless at night, and dirty in bed. The pulse was generally quick, and bowels were constipated. Cooling saline mixture, croton oil, on one occasion, and regulated diet, were the means used. Subsequently, bodily occupation and amusements were put in requisition, whereby she became convalescent. The second case was an example of the variety denominated melancholic. In this patient, a married woman, aged thirty, suicidal and hereditary tendency to mania existed. She was hasty in temper, but naturally cheerful. The attack commenced a month after delivery; and her child was weaned when six weeks old. She had been much debilitated by hæmorrhage after labour; appeared often very depressed and melancholic; was generally very desponding of her insane state, and had attempted to injure herself. She took food very unwillingly; could not sleep at night; would scarcely remain in bed, and endeavoured to escape from her room. The pulse was natural, and the bowels regular. Early in the disease, leeches were applied once to the temples, and afterwards blisters to the neck on three occasions. Opiates and camphor were prescribed, with purgatives, especially the compound decoction of aloes. Latterly, the cold shower-bath and tonic medicines were employed. The diet, at first light, was subsequently more nutritious, and malt liquor was allowed; by which means, and by proper occupation, subsequently conjoined with

amusements, she recovered. Mechanical coercion was, in Dr. Webster's opinion, even more inapplicable to puerperal insanity than to ordinary cases of mania; because wherever the strait-waistcoat is adopted, lest the patient might injure herself (the excuse commonly assigned by attendants), exasperation and excitement appear more frequently as a consequence of, than a warrant for, such barbarous proceedings. This is especially true of suicidal patients: experience demonstrates that the mechanical restraint of persons so disposed), and even of individuals who have never shown any propensity of the kind), often acts as a highly exciting cause of suicide. The degradation which lunatics feel when treated like criminals, frequently produces most injurious effects. If the insane patient, subjected to such cruel treatment, be a female of delicate constitution, susceptible feelings, and high accomplishments, the objections to the strait-waistcoat, or similar mechanical means of coercion, become much stronger, as the results, in all likelihood, will prove more disastrous.

DECEMBER 2, 1848.

JOHN WEBSTER, M.D., F.R.S., PRESIDENT, IN THE CHAIR.

RHEUMATISM, AND HEART DISEASE. By DR. R. C. GOLDING. A dress-maker, aged twenty-four, had been under Dr. Golding's observation, and often treated for rheumatism by him during more than three years. Dr. Child had attended her during her last illness, and had invited Dr. Golding to the autopsy. The cardiac disease had lasted for six or seven years, its symptoms not having materially varied since she first came under Dr. Golding's care. Her health, when free from rheumatism, was tolerably good; and as great caution in diet and regimen was enjoined and punctually observed, her life was prolonged, till the accession of the pleurisy and bronchitis, for which Dr. Child attended her. The physical signs indicated great hypertrophy of the heart, with double valvular disease of its left cavities. Dulness was appreciable along the lower half of the sternum, as high on the right side as the cartilage of the third rib, and on the left to the second rib. The apex of the heart was felt beating between the seventh and eighth ribs, three inches at least more to the side, than in health. The sounds were feeble; the rhythm, under ordinary circumstances, not impaired; the impulse strong; and the pulse full and bounding. There was a double murmur at the apex, and a very loud and rough diastolic sound at the upper part of the sternum, at its sides, and along the neck. *The autopsy* revealed great thickening of the tricuspid, mitral, and aortic valves: the two former formed perfect rings around the auriculo-ventricular openings, which must have been patent during life; the pulmonary valves were healthy; and the aorta above the valves was much contracted. The pericardium was thickened, but nowhere adherent or unduly vascular. There was recent pleurisy of the right side, and great congestion of the lungs, with a little emphysema. The gall-bladder contained a few small calculi.

Dr. Golding considered that the heart (which he exhibited) showed clearly that rheumatism was the cause of the valvular lesion in both ventricles; that the same disease, influencing the valve in precisely the same manner, and relatively in the same degree, existed in both tricuspid and mitral valves; and that the perfect rings formed by the adhesion from inflammation of the divisions of the valves respectively (together with the thickening, shortening, and adhesion of their chordæ tendineæ), must have been attended, during life, with permanent patency of their orifices.

CASE WHICH PRESENTED MANY SYMPTOMS OF LACERATION OR RUPTURE OF THE UTERUS. By DR. S. WM. J. MERRIMAN. A woman, aged twenty-eight, in labour of her third child, was found with the os uteri fully dilated, the bag of membranes dilating the vagina, and the vertex presenting over the pubis. The membranes having speedily ruptured, the head descended, but not so as to occupy the whole brim of the pelvis; on the contrary, very violent pains

drove it rather against the pubis and fore part of the vagina. After an hour's duration of unusual suffering, chloroform was exhibited for two hours, in hopes of mitigating the suffering, while the pains propelled the head gradually downwards; but this not ensuing, three doses of ergot were given, without any pains succeeding. Vomiting and tenderness of the abdomen came on about this time, to relieve which the patient had forty minims of laudanum. After some hours, it was found that the head had been completely retracted, and the constitutional disturbance still continuing, Dr. Chowne's advice was sought. The woman was delivered by turning, twelve hours after the cessation of the pains. The child, which was dead, lay very high up, yet still within the uterus, and the hand was first reached. The uterus contracted well. The patient recovered.

DECEMBER 9, 1848.

FRANCIS HIRD, ESQ., V.P., IN THE CHAIR.

ACEPHALOUS MONSTER BORN AT THE FULL PERIOD OF PREGNANCY. By MR. HARVEY. Another child accompanied it, which was remarkable for its badly-nourished condition; the funis was small and short; there were two placentæ; that belonging to the monstrosity was very large. When it was born, the integuments presented a dark blue colour above the umbilicus, and below it a pale red. The exterior view presented no head or upper extremities: the inferior extremities, large and well-formed, terminated in club-feet; the left foot had three toes, the right five, each furnished with a nail. On the fleshy substance above and between the shoulders, representing the head, were observed some slight tufts of hair, and two button-shaped fleshy substances, the one in the centre and the other to the right side. The external organs of generation were well marked as a female, and the anal aperture communicated with the intestinal tube. An incision was made through the centre of the body, with the view of inspecting the parts within; it brought into view a cavity containing the base of the skull resting on the atlas on either side, bounded by the ribs; neither clavicle nor sternum was present. The cavity was filled with loose cellular structure and a sac, which might contain about a teaspoonful of fluid; the internal layer resembled the fibrous structure of the auricles of the heart. The connexion of the sac with the umbilical vessels was made out, but no vessel could be discovered running from it; perhaps this was in consequence of decomposition. A large vessel, probably the aorta, took the course of the vertebral column on each side, and terminated in four distinct branches at the sacrum, two running to the anterior part of the thigh, and two to the posterior. There was an absence of all the viscera of the abdomen, excepting the intestinal tube, which was closely adherent to the abdominal parietes. The urinary organs and the internal organs of generation were also absent; the spinal portion of the skeleton was greatly incurvated, and on each side of the three upper ribs was a loose portion of bone resembling a scapula. The spinous processes of the vertebræ were much enlarged, and the vertebral canal was filled with spinal marrow; the nerves arising from it were observed to be large and irregularly distributed. Very little muscular structure was observed; the anterior parietes of the abdomen being composed, solely, of common integument and adipose structure. Mr. Harvey exhibited the fœtus.

COLLODION. MR. I. B. BROWN stated, that he had used Collodion with advantage in cases of sore nipples.

DECEMBER 16, 1848.

JOHN WEBSTER, M.D., F.R.S., PRESIDENT, IN THE CHAIR.

A PREPARATION OF AN UNUNITED, COMMINUTED FRACTURE OF THE SURGICAL NECK OF THE HUMERUS, ACCOMPANIED BY DISPLACEMENT OF THE LONG BICIPITAL TENDON; ALSO, AN EXAMPLE OF UNREDUCED DISLOCATION OF THE

Radius forwards at the Elbow, with Partial Luxation of the Ulna inwards, were exhibited by Mr. Canton. Both specimens were removed from the right arm of an elderly female, and no history of them could be ascertained. In the first preparation a strong fibrous capsule was formed, enclosing the ends of the broken bone, and in it were entangled the comminuted fragments, one of which was coated with porcellanous material, in a manner similar to that part of the surface of the shaft it had played on. The shaft was drawn upwards and inwards; the biceps tendon was well retained in its new situation on the lesser tubercle of the humerus, and the articular surface of the bone was directed unnaturally outwards. In the second preparation, Mr. Canton remarked, it was interesting to observe the great degree of mobility which Nature had established, though the accurately-fitting surfaces of the ulna and humerus no longer rightly corresponded with each other; and this had been obtained by a modification of the form of the trochlea, and by extension inwards of its surface; so that, from this latter circumstance, the projection of the internal condyle was altogether lost. The head of the radius revolved freely in a broad cavity above the capitulum humeri, and was retained *in situ* by a strong coronary band passing from the external condyle to the anterior edge of the lesser sigmoid cavity of the ulna. The coronoid fossa was obliterated, and the pit for the olecranon nearly filled up.

Case of Perinæal Abscess, with Symptoms resembling Quotidian Ague. By Mr. Henry Smith. The patient—a gentleman of middle age—had been under treatment for a month, when Mr. Smith first saw him. On the third day after the first visit, he called Mr. Smith's attention to pain in the perinæal region, and, on inspection, a tumour was discovered containing matter, which was evacuated in large quantities; and on the following day, a stricture having been discovered, a small catheter was passed. The patient was greatly relieved, and recovered quickly, having had no return of the rigors, or other feverish symptoms. It was far from uncommon to meet with cases in which symptoms simulating ague accompanied diseases of the urinary apparatus, especially perinæal abscess; but it was rare for the symptoms to be so prominent, and so strikingly similar to ague. They alone had attracted the attention of the practitioner who had attended him.

Mr. Harvey questioned the propriety of passing the catheter so immediately after opening the abscess. The latter step removed all the urgent symptoms, and, in fact, was the best proceeding that could have been adopted for the relief of any stricture. Even if there had been a communication with the urethra—which in this case there was not—so early an interference was objectionable, being apt to do mischief in parts already made liable to be injured, by the formation of matter.

Mr. Hird did not object to the use of the catheter after the abscess was opened; but he should not have employed it so early.

Mr. Canton thought the use of the catheter good practice, if employed at a *later* stage.

Mr. Wade did not see any objection to the use of the catheter soon after opening the abscess. The stricture might be treated at once.

December 23, 1848.

Francis Hird, Esq., V.P., in the Chair.

Fatal Scarlatinal Dropsy and Convulsions. By Mr. Henry Smith. He had been called to a case of Scarlatinal Dropsy, in a lad of 16, commencing about ten or fourteen days after the eruption appeared. The boy was in a fit; he applied a blister to the neck, and gave a strong purging dose; the convulsions, however, recurred frequently, and in the evening he bled him to eight or ten ounces. Immediately, the convulsions ceased; but the respiration became very difficult, from obstruction in the bronchi, and he died from asphyxia, the next morning. Before bleeding, the pulse was quick and

sharp, and the pupils dilated; the urine was very scanty, and of a deep red colour. Mr. Smith asked if the bleeding had accelerated death?

Chloroform in Parturition. By Dr. Snow. He said that the chief objections which had been made to the use of anæsthetics in midwifery were of an *à priori* kind, but that the question ought to be decided by experience. Some objections had arisen from the supposed necessity of inducing a deep state of insensibility, and he was of opinion, that if it were requisite to cause the same amount of insensibility in midwifery, as is required in surgical operations, this would be a valid objection, as he considered that this state could not be continued for two or three hours without injury to the patient. But this amount of insensibility was not required in obstetric practice, except to arrest or diminish strong uterine action for a few minutes to facilitate turning the child. The suffering, attendant on labour, might often be greatly relieved, or even altogether removed, without suspending the consciousness of the patient. Towards the conclusion of labour, it was usually necessary to carry the effect of the vapour a little farther; but even then it should not exceed the second degree of anæsthesia, or that condition of the patient in which the mental functions are not altogether suspended, but in which there is a dreaming or wandering state of the mind—the patient, nevertheless, usually remaining silent if not spoken to. In labours unassisted by manual or instrumental aid, the auxiliary action of the respiratory, and even of the voluntary muscles, continued without interruption when the Chloroform was well managed. Dr. Snow thought that a medical attendant acquainted with the action of Chloroform, and the mode of applying it, might administer it with propriety in all cases, in which the pain was either severe or protracted, whether they fell within the division called natural labours or not. He then related two cases in illustration of the beneficial action of Chloroform. He had used an apparatus in administering it, giving a little at the beginning of each pain. He disapproved of Dr. Simpson's plan of giving Chloroform on a handkerchief, and more particularly of his practice of putting three or four drachms on the handkerchief to begin with. To show the danger of this practice, he alluded to the fatal cases published, and read some notes, furnished to him by Mr. Henry Smith, of a case in which the patient very nearly lost her life from Chloroform given in this manner, preparatory to an operation. Chloroform was of great service in removing rigidity of the os uteri and of the perinæum; and it had relieved puerperal convulsions in two cases on record.

Dr. Snow concluded by remarking that as all medical men were actuated in their views only by a desire for the well-being of their patients, the difference of opinion in the profession concerning the employment of Chloroform in midwifery ought not to be attended with any acrimonious feelings.

[The discussion on Dr. Snow's paper was adjourned.]

January 6, 1849.

John Webster, M.D., F.R.S., President, in the Chair.

Excision of the Os Calcis. Mr. Hancock related a case, in which he had removed the Os Calcis from a patient suffering from caries of that bone,—a proceeding which he believed had never been previously adopted; and although, from the causes detailed, the case did not terminate so favourably as could be desired, still the operation had succeeded in two instances, related by Mr. Greenhow, at the Newcastle and Gateshead Pathological Society, and was therefore worthy of consideration. Case. R. W——, aged 24, a butcher by trade, and of scrofulous diathesis, was admitted into the Charing-Cross Hospital on the 23rd of May 1848. He was suffering from caries of the Os Calcis of the right foot, with abscess; the bone was rough, but not loose. His other leg having been removed some two or three years before, for scrofulous disease of the knee-

joint, Mr. Hancock was anxious to preserve as much of the remaining foot as possible, and accordingly decided, as the disease appeared to be limited to the Os Calcis, to confine his operation to the removal of that bone alone. Accordingly, on the 2nd of June, the patient having been placed under the influence of chloroform, assisted by Mr. Avery and Mr. Canton, he removed the bone, by carrying a semilunar incision from the posterior angle of the inner malleolus across the sole of the foot, to the external malleolus, the convexity of the flap looking forwards. The flap, thus made, was carefully reflected, the tendo-Achillis divided, and the knife being carried from behind, forwards, between the astragalus and the Os Calcis, the latter was dissected out without any difficulty. Two or three vessels were tied, and the flap being brought over, the edges were united by sutures and strapping. The patient went on extremely well until the 6th, when erysipelas came on, accompanied with severe constitutional disturbance. On the 9th, a considerable portion of the flap sloughed, and it eventually came away on the 16th, but sufficient skin remained to cover the bones completely. He continued to improve until the middle of July, the external wound being almost healed, and the foot becoming firm and of good shape; but at this time he was again attacked with erysipelas; several abscesses formed in the limb, both in the foot, above and below the wound, and in the leg and ham; his strength gave way, he became very low and weak, and it was evident that there was very little probability of saving his limb; but being anxious to give him every chance, Mr. Hancock determined to try the effect of the protein, so highly recommended by Mr. Tuson, and this was accordingly given in doses of fifteen, afterwards increased to twenty grains, thrice daily. For some time his general health improved, but the foot did not mend; and at length, as the constitutional symptoms returned, and further delay appeared dangerous, the leg was removed at about five inches below the knee, on the 6th of October, just four months after the former operation. Mr. Hancock was inclined to attribute the want of success of the first operation to the state of the patient's constitution, and the attacks of erysipelas, rather than to other causes; and he was confirmed in this opinion by the success which had attended the two operations since performed by Mr. Greenhow, both of which were cases of accident and not disease. Mr. Hancock considered that this plan was well worthy the consideration of the profession, and should be selected in patients of good constitution, or in accidents, where the mischief was confined to the Os Calcis, rather than the methods hitherto employed, as thereby the ankle-joint is preserved entire, a matter of considerable importance to the patient. In conclusion, he corrected an error into which Mr. Greenhow had inadvertently fallen in the relation of his two cases, in stating that "the operation had never been performed before he did it." Mr. Greenhow had the credit of the first successful case, but the dates of the several operations prove, that Mr. Hancock was the first to introduce the plan into the practice of surgery. His operation was performed on the 2nd of June, above ten weeks before Mr. Greenhow's first, which took place on the 15th of August, whilst his second was performed on the 17th of October.

Chloroform in Midwifery. (Adjourned Debate.) Mr. Gream objected altogether to the use of Chloroform in Obstetrics. It had a cumulative property which might suddenly develope itself, and destroy the patient. He believed that a very short time only would elapse before Chloroform would cease to be heard of in midwifery. Mr. Gream entered into an elaborate statement of his objections. They were of two kinds; *moral* and *medical*. Under the *first head*, he quoted a humorous description by Mr. Miller, of the first discovery of Chloroform as an anæsthetic agent. The effects were very decided; at first simulating the "victorious" nonchalance of "Tam O'Shanter", and ending with the Edinburgh professors kicking and sprawling under the table. Mr. Gream then alluded to several cases in which women

had, under the influence of Chloroform, made use of obscene language. This latter fact alone he considered sufficient to prevent the use of Chloroform in English women. The *medical reasons* consisted of the fact of his having heard of twelve cases of convulsions arising from its use; and five cases of mania following its employment.

Dr. Sibson considered, that in all cases in which there was a tendency to congestion in the head, Chloroform was unadvisable.

Mr. Hird argued, that the objections against Chloroform might be urged with equal weight against other poisonous remedies, such as opium and arsenic, but with no better foundation.

Dr. Tanner mentioned a case of an operation in King's College Hospital, on the vagina of a prostitute, in which ether produced lascivious dreams.

Mr. Hancock had noticed this effect in some operation cases.

Tracheotomy for Obstruction in the Larynx. Mr. Henry Smith related a case of Obstruction in the Larynx, in which he had resorted to the operation of Tracheotomy. The patient, eleven months of age, had suffered from chest affection for several days; and three days before he saw it, symptoms of obstruction in the upper part of the air-passages presented themselves. When he was called, he found that interference was immediately called for, and at once proceeded to open the trachea. This he did in the usual way, with the loss of about an ounce and a half of blood. The operation lasted about a quarter of an hour, time being taken over it, as the little patient was very weak. The child lived six hours after the proceeding, and on examination, the trachea was found healthy, the lungs being in some parts congested. The disease was confined to the pharynx and larynx, which had been inflamed and thickened, the epiglottis and glottis being involved in the mischief.

Dr. Willshire thought that Tracheotomy was more likely to be successful in cases of croup than in diphtherite.

Dr. Sibson had observed a diagnostic mark of obstruction in the larynx, which he thought might be relied on. When such obstruction existed, there was not only a hissing noise, but the walls of the chest collapsed in inspiration, the chest becoming narrower and flatter, whilst expiration was longer and slower than inspiration. In diphtherite, where there was no obstruction beyond the tube, he saw no evil in Tracheotomy. In this operation, one of the most important evils to be avoided was the entrance of blood into the air-passages, and this was best prevented by the use of a trochar and canula. In some cases, the introduction of a male catheter through the glottis had been successful in preventing the necessity of operation.

Fungus of the Bladder. Mr. Nunn exhibited a bladder containing a small fungous growth, taken from a patient in the Middlesex Hospital, into which he had been admitted on December 6th, for hæmorrhage from the urinary organs, then existing about four days. No disease whatever could be felt by the hand applied over the pubes, or by the finger in the rectum, or by the catheter, and the man gradually died from hæmorrhage, losing from six to eight ounces of blood a day. He had had gout, but not for five years. The microscope showed pus-globules in the urine.

January 13, 1849.

John Webster, M.D., F.R.S., President, in the Chair.

Chloroform in Midwifery—Adjourned Debate. Dr. Rogers said, that so far from the Chloroform causing immoral emotions, in his practice he had noticed the very contrary effects, as during the delivery the patients were not only thankful, but prayed most eloquently, and sang psalms and hymns in an angelic strain. He had given Chloroform in twenty cases. In all it seemed of the greatest service, and in none had he been able to trace ill effects.

Dr. James Reid was not an opponent to the use of Chloroform in obstetric practice. He had, however, never advocated its employment, and his experience of late had tended to make him think even less favourably of it than he formerly did. He entered at some length into three cases in which he had employed it. In the first instance, a lady who had suffered severely during her first five confinements, in which he had attended her, but in all recovered without a bad symptom,—had in her sixth confinement taken Chloroform. He did not believe that it had at all diminished her sufferings, and from that hour to this, a period of three months, she had been a dreadful invalid, suffering from a train of nervous symptoms, such as he had never witnessed, and of which Dr. Merriman only recollected one parallel instance in his vast practice, *and that was the result of intense drunkenness.* The chief symptoms in this case were most distressing sickness and headache. In other cases, the Chloroform had not relieved the pains of labour.

Mr. Wade had employed Chloroform pretty extensively in private and dispensary practice, in all kinds of persons and various kinds of operations; he had never seen any "immoral" effects produced.

Dr. Snow replied at great length. *In vino veritas* was a proverb as applicable to Chloroform as to alcohol; and under no circumstances would "moral" women use "immoral" expressions.

January 20, 1849.

John Webster, M.D., F.R.S., President, in the Chair.

Ruptures of the Uterus and Vagina. By Mr. R. Greenhalgh. The author stated, that out of 78,018 deliveries occurring under the superintendence of Drs. Ramsbotham, Collins, Hardy, McClintock, Joseph Clarke, and McKeever, this accident occurred eighty times, or once in 975 cases; out of 71 recorded cases by these authorities, 66 were fatal to the mothers—five only having recovered, or about 1 in 14. Out of 18 deliveries, 17 were fatal to the children. He then gave the result of nine cases recorded by Dr. Murphy, in the seventh volume of the *Dublin Journal of Medicine*, all of which were fatal to the mothers; eight of the children were still-born; one, a girl, was born alive; three mothers were 36 years of age—two, 30—one, 46—one, 26—one, 21. Two were in their tenth labour; two, in the first; two, in the third; one, in the eleventh; one, in the sixth; one, in the fifth. Eight were delivered by the crotchet; one by the natural efforts. One mother died eleven days after delivery; one, eight; one, six; one, four; one, three; one, two; two in thirty hours; one in twenty-four hours. In five cases the rupture occurred in the anterior part of the cervix uteri; two in the posterior; one patient was not examined, and in another no spot is specified as the seat of the accident.

The author then detailed a case to which he had been called. The patient was 35 years of age, in labour with her sixth child; the arm and shoulder presented, but this position was converted, by one of the gentlemen in attendance, into the first position of the head, about two hours after which she complained, during a pain, that something had given way in her inside; vomiting, fainting, extreme prostration, oozing of blood from the os externum, together with recession of the presenting part, speedily followed. While suffering from these symptoms, Mr. Greenhalgh was first called upon to visit her. After giving her some brandy and laudanum, he proceeded to turn the child, which he accomplished with some difficulty in the space of about three-quarters of an hour, having first removed the placenta from the vagina, where it was found lying unattached. The child was still-born; the shoulder and arm were much swollen and ecchymosed, and over the right parietal bone was a distinct scalp tumour. She sank sixty hours after delivery, from exhaustion, in spite of a frequent and liberal supply of nourishment and stimuli. No circumstance had occurred during her pregnancy to induce her to seek medical advice; although, when closely questioned, she admitted

that she had suffered more than usual from sickness, pains in her breasts and in the left iliac fossa, and that when the child moved it gave her an idea that it was passing "over a sore place". No post-mortem examination was permitted; but during the operation of turning, a large rent was discovered, through which the child had escaped into the abdominal cavity, extending from the anterior and upper part of the vagina, through the os and cervix uteri, and passing obliquely to the right side of the pelvis. Mr. Greenhalgh drew the attention of the Society to the absence of symptoms, during this patient's pregnancy, of softening and inflammation; to the comparative immunity from this accident in women who have complained of tenderness, pain, and other symptoms usually regarded as indicative of uterine inflammation, which have gone on unchecked by medical treatment; to the feebleness of the uterine efforts in this case; and the very unusual circumstance of the conversion of a shoulder and arm presentation into that of the head.

Another case occurred in a patient of the Middlesex Hospital. The patient was about thirty-five years of age—it was not her first confinement—she had been some hours in labour—the breech presented—rupture of the uterus took place, followed by vomiting of a very violent character, great exhaustion, partial escape of the presenting part into the abdominal cavity, and more or less discharge of blood from the os externum. After having given a dose of brandy and opium, Mr. Greenhalgh brought down the feet of the child, which he extricated without delay; the infant was still-born. The patient sank shortly afterwards from exhaustion.

Mr. Greenhalgh detailed two doubtful cases of rupture. One was a first labour, the other an eighth—both female children. In the first, the pains were irregular and spasmodic; in the second, perfectly natural in recurrence, and above the average strength. In both the head presented; one was of natural conformation, the other hydrocephalic; the first was expelled by the unaided efforts of nature, the second by perforation; a sensation, as if something had given way in the abdomen, during a pain, followed by a partial recession of the presenting part, was present in both cases; also great prostration, vomiting, but not of coffee-ground fluid, escape of blood from the vagina, and subsequently acute peritonitis. Both mothers recovered, and have since borne male children, without any untoward occurrence.

The author concluded by stating, that he considered this accident more common than was generally supposed; that it far more frequently occurred in patients who had had many confinements, than in primiparæ; that the seat was usually found in the cervix uteri and the upper part of the vagina; that ergot of rye might cause this accident, by increasing the action of an attenuated uterus, but not by producing any structural change in that organ. The Cæsarian operation, in the case first recorded, would, he thought, have given the patient a much better chance, than the forcible attempts to extract the child.

January 27, 1849.

Francis Hird, Esq., V.P., in the Chair.

Case of Scarlatina, followed by Purulent Deposits. By Dr. Routh. The child was three years old, and was first taken ill on the 7th of January, with symptoms of general fever. On the 8th, the eruption of scarlatina and an otitis made their appearance. The fever progressed favourably, and lasted eight days, or till the 15th. On the 17th, the mother noticed the desquamation of the cuticle. On the 18th, feverish symptoms again appeared, the otitic discharge having persisted throughout, and in no way diminished. Next morning, the 19th, the face and body were swelled, but pale. By accident, the mother noticed a swelling about the size of a goose's egg in the left side of the abdomen. On the 22nd, a swelling about the size of a pigeon's egg appeared over the internal condyle of the right humerus. Dr. Routh first

saw the child on the 26th instant. The abdominal tumour was then about the size of two goose's eggs, evidently situated between the parietes of the abdomen. A similar swelling, about the size of a small hen's egg, was situated over the inner condyle of the right humerus. In both, fluctuation was very distinct. The surface of the skin was very pale. Over the abdominal tumour, however, one tortuous and enlarged purplish vein was noticed. The left humerus was swollen, and apparently œdematous, but pale, and tender to the touch. There was no œdema elsewhere. The aspect of the child was very unhealthy; the tongue rather brownish; the pulse quick and feeble. A puncture being made with an exploring needle in the swelling on the right humerus, indicated the presence of pus. The case was interesting, as exemplifying a rare form of sequela of scarlatina—the pus being effused externally to, and not within the joints, and also as being preceded by symptoms of renal dropsy. In regard to the treatment, Dr. Routh asked whether the pus should be evacuated or not?

Two Bandages, applicable in the treatment of Ovarian Dropsy, were exhibited by Mr. I. B. Brown. The first, intended for the treatment with or without previous tapping, is made to lace up, and thus the amount of pressure can be daily increased. It is fitted with pieces of whalebone, to keep it smooth, and is secured round the thigh by straps. This bandage is equally beneficial as an abdominal support in other cases. The second form of bandage is applicable where pressure is required for a long time after tapping; it is simple in structure, and fastens by straps and buckles, and contains an air-cushion, which, being emptied or filled, lessens or increases the pressure as it is required, without the necessity of undoing the bandage.

Fibrous Tumour, compressing the Ureters, and causing Renal Disease. By Dr. Murphy. A woman applied to the author, having the pelvis occupied almost entirely by a firm tumour, so that the os uteri was beyond the reach of the finger, and micturition impossible, except by the aid of a catheter. After a few days he was called to her, and then passed a gum elastic catheter to its full length, but obtained no urine, although she was suffering from symptoms of retention of urine; she rapidly sank and died. On opening the abdomen, a large tumour was found, which had displaced the intestines, and reached upwards to the umbilicus, and laterally to the iliac fossæ. The mass of the tumour lay on the left side, and had nearly incorporated the uterus, which, however, with the right ovary, was found projecting from its right margin. The bladder was contracted and empty; but the ureters, being compressed by the tumour, were enormously distended and tortuous. The kidneys were enlarged and in advanced state of Bright's disease. The tumour proved to be fibrous, engaging the whole posterior wall of the uterus, the cervix being stretched for some inches along its anterior surface, and expanded over it. The uterus had been drawn out of the pelvis by the growth of the tumour. A small portion in its centre was softer and more friable than the rest. The author drew attention to the unusual position of the tumour, occupying the pelvis so completely as to displace the uterus entirely; to the advisability, if practicable, of pushing such a tumour out of the pelvis when small.

February 10, 1849.

Francis Hird, Esq., V.P., in the Chair.

Case of Hæmatemesis from Ulceration of the Gastric Artery. By Mr. Benjamin Travers. A widow, of middle age, and almost chlorotic in appearance, was seized with vomiting of blood; she rallied a little, but in the night was again attacked, threw up a large quantity, and shortly afterwards died. On a post-mortem examination, the stomach was found to contain much grumous fluid, with a circular breach, like an ulcer, directly over the gastric artery, which was laid open by an orifice admitting the end of a blow-

pipe. The peritoneum was healthy. None of her medical attendants had ever suspected the existence of ulceration in the stomach.

FEBRUARY 17, 1849.

JOHN WEBSTER, M.D., F.R.S., PRESIDENT, IN THE CHAIR.

CASE OF ULCERATION OF THE CÆCUM, ETC. By DR. OGIER WARD. There was also enlargement of the mesenteric glands, which formed a tumour in the right iliac fossa of a girl aged nineteen, who had never menstruated. The diseased parts were exhibited.

The patient was of a sickly family, and had never been strong herself, the only appearance of menstruation being a very slight "show," four months since. She had been anæmic for the last three years, and during the last year had had wandering abdominal pains, supposed to be the access of the menses, but subsiding on fomentations being applied. The pains had been more frequent since the "show," but she was able to do the work of the house till January 13th, when Dr. Ward first saw her. Her bowels had been costive lately, but were then opened by medicine. The face had a slight hectic flush, the skin was hot and dry, the pulse 120, the tongue, hitherto pallid, was of a natural redness and moist; no appetite; no pain anywhere; no disease could be detected in the chest. The abdomen was soft and compressible in every part except the right iliac fossa, where a tumour existed, painful on pressure, of the size of an egg, defined upwards and towards the median line, but not downwards or outwards. The symptoms continued much the same till her death, on February 13th, but the fever, which assumed a remittent type, was completely controlled by quinine. Aphthæ formed in the mouth, and peeled off in large flakes the day before her death. The head was not examined. The lungs contained many miliary tubercles in the upper lobes. The stomach was large, and the lower portion of the œsophagus covered with ragged epithelium, like that on the tongue. The liver was enlarged, extending below the ribs of the right side, and far to the left of the epigastrium; the lobuli were all tinged with bile, and appeared slightly fatty. The spleen was about three times the natural size. The kidneys were about twice as large as natural, but apparently healthy. The omentum was adherent to the brim of the pelvis, and dragged down the transverse colon so as to conceal the small intestines. The lower portion of the ileum was ulcerated in spots down to the cæcum, which contained much fluid fæces, and was enormously thickened by tubercular deposit under the peritonæum. The mucous membrane was completely destroyed by a large ulcerated surface extending about ten inches up the colon, and then terminating abruptly. The mesenteric glands were much enlarged by tubercular deposits. The uterus was healthy. The ovaries resembled sparrows' eggs in size, shape, and colour, being enveloped in a cartilaginous membrane half a line thick. The tumour was formed partly by the cæcum, and partly by the enlarged glands. Its want of definition downwards was caused by the diseased mass descending into the pelvis, where it had contracted firm adhesions.

BALLOT FOR THE ELECTION OF OFFICERS. The following Fellows were elected office-bearers for the ensuing year:—PRESIDENT. Francis Hird, Esq. VICE-PRESIDENTS. E. W. Murphy, M.D.; John Snow, M.D.; E. Lankester, M.D., F.R.S.; J. F. Marson, Esq. TREASURER. Aug. Sayer, M.D. HONORARY SECRETARIES. S. W. J. Merriman, M.D.; R. Greenhalgh, Esq. COUNCIL. C. Wing, Esq.; J. W. Woodfall, M.D.; I. B Brown, Esq.; W. Harding, Esq.; W. R. Rogers, M.D.; W. D. Chowne, M.D.; A. B. Garrod, M.D.; F. R. Manson, M.D.; W. Harvey, Esq.; T. H. Tanner, M.D.

FEBRUARY 24, 1849.

FRANCIS HIRD, ESQ., PRESIDENT, IN THE CHAIR.

REMARKABLE DISEASE OF THE SCROTUM. MR. CANTON narrated the case which we reported at p. 466 of our May Number.

March 3, 1849.

Francis Hird, Esq., President, in the Chair.

Iodide of Potassium in some cases of Strumous Corneitis, Hypopion, and Syphilitic Iritis. By Mr. Hancock. The author employs this remedy extensively in strumous inflammation of the cornea, attended with opacity from interstitial deposit; in interstitial abscess of the cornea; in iritis, attended with effusion of matter into the anterior chamber; in rheumatic inflammation of the sclerotica and iris assuming the chronic form; and, indeed, in all cases of deep seated inflammation of the eye occurring in debilitated or irritable constitutions. He considers it superior to calomel, exerting its absorbent powers more quickly and with greater certainty, and without, in the majority of cases, producing the distressing ptyalism. In syphilitic iritis, he seldom found it necessary to push mercury to any great extent, and usually gave two grains of it every night at bedtime, combined with opium; and at the same time the iodide of potassium mixture twice a day; using the latter medicine in the formula recommended by Lugol.

March 10, 1849.

Francis Hird, Esq., President, in the Chair.

Case of Chronic Rheumatic Arthritis of the Shoulder and Hip Joints. By Mr. Canton. The preparations of these articulations were exhibited. James Harrison, aged seventy-nine, a tall, emaciated, and feeble man, stated, that in the year 1805 he "got thoroughly wet through," and the next morning suffered from rheumatism of the right shoulder, but in no other part. This was his first attack, of which Dr. Hope, of Edinburgh, relieved him in a short time. Up to the winter of 1847 the joint had been free from uneasiness, except in damp or frosty weather, when a "sensation of gnawing" in the part, troubled him whilst the inclement weather lasted. This inconvenience, however, was not of a nature to prevent him following his usual work, as a gentleman's servant. In unfavourable weather the pain was always aggravated "when warm in bed." In the winter of 1826 he caught a violent cold, from which time the left hip was affected with pains, which, like those of the shoulder, were invariably increased in frosty or damp weather, and when in bed. The pain was always especially felt "the first thing in the morning," whilst a sensation of cracking and grating in the joint was frequently complained of; at the same time the sound emitted, particularly when rising from a sitting posture, was audible to, and remarked upon by, the by-standers. Nine or ten years ago he entered the Middlesex Hospital, under the care of Mr. Arnott. Various applications were employed without relief; and at the expiration of a month, the nature of the disease and its intractable character having been explained to him, he quitted the hospital. At this time he walked lame, and was informed, after admeasurement of the limbs had been made, that the left leg was shorter than the right.

When seen by Mr. Canton, no great difference was noticed, as the opposite hip had become similarly affected. No distinct attack of rheumatism occurred to the shoulder since that above mentioned, but it continued the seat of the same symptoms as those previously described during the last twelve months. On applying the hand over the joint, and then rotating and circumducting the humerus, a very well-marked articular crepitus was heard, and the peculiar sensation characteristic of it, also, was communicated to the touch. The crepitus was most readily felt when, in circumduction, the arm passed forwards from the side of the chest; the movement producing, at the same time, an indescribable uneasiness in the articulation; pressure on the deltoid muscle, so as closely to approximate the joint-surfaces of the humerus and scapula, gave no pain, nor was any inconvenience experienced when the head of the humerus was directed against the under part of the acromion

process. The arm could with difficulty be elevated or directed forwards or backwards. The deltoid of either side, in common with the muscles generally, was much wasted; little, if any, difference was to be noticed, however, between the two sides. Measurement did not show the right humerus to be nearer the acromion process than it was on the left side. An incessant dull pain, aggravated by motion, was complained of in the joint, and extending thence down the front of and along the inner side of the arm to the elbow. The acromio-clavicular articulation presented a partial dislocation of the clavicle, which was elevated, and appeared to be fixed near to the upper edge of the articular surface of the acromion process. This joint on the opposite side was in all respects normal.

Post-mortem examination. 1st. Shoulder. The glenoid cavity was more shallow than is natural, in consequence of an expansion of its outer part depending upon the deposit of new bone in the glenoid ligament, whereby the surface for articulation with the humerus was rendered additionally broad. The long tendon of the biceps, as it passed through the joint, was considerably flattened, expanded, and divided into four or five slips, placed side by side. This condition of the tendon had permitted the head of the humerus to shift upwards, and, thereby, to articulate with the under part of the acromion process, in which situation was seen a broad surface, against which the former played. The capsular ligament, however, was intact. The great tubercle of the humerus was flattened, and three of the capsular tendons at their insertion were, in part, absorbed. In the opposite shoulder similar changes were in progress, but they had not proceeded to so great an extent as in the fellow joint. 2nd. Hip-joint. This showed the ravages of chronic rheumatic arthritis to have progressed to a great degree. The acetabulum was much deepened, from bony deposit in the cotyloid ligament; the encrusting cartilage was wholly removed, and at the upper and outer part of the cavity, porcellaneous material was present in a continuous sheet, and having a high polish. The ligamentum teres was absent. Bony plates were lodged in the capsular ligament The head of the femur was mis-shapen, its form being accommodated to that of the acetabulum. The cartilage was wanting, and ivory-like deposit was present, corresponding in extent and situation to that in the cotyloid cavity. The cervix femoris was short, horizontal, and, at the anterior part, encroached upon by new bone, which sprang from the circumference of the head, and adhered to it in this situation. The cortex was thin, and the medulla abnormally soft and red. The fibrous structures, generally, of the articulation, were unduly vascular.

Dr. Webster's Presidency. Resolved unanimously, that "The warmest thanks of the Society be given to Dr. Webster, for the zeal, ability, and uniformly courteous conduct evinced by him during the period of his presidency."

Case of Anæsthesia and Paralysis of the Right Side of the Face. By Dr. Rogers. A light porter, aged twenty-seven, got a severe wetting, which gave rise to giddiness, deep-seated and shooting pain in the right temple, with deafness and buzzing in the corresponding ear, and considerable tenderness of the parts in front of it; these symptoms were accompanied by a gradually increasing anæsthesia of the right side of the face, right nostril and orbit, and the right half of the palate; the extent of the affection accurately corresponding to the limits of the anatomical distribution of the ophthalmic, superior maxillary, and temporo-auricular branch of the inferior maxillary nerves. Under treatment, this symptom began considerably to abate, and the patient, feeling himself much improved, ventured to go out of doors for the benefit of the air, but on his return, violent and deep-seated pain was felt in the temple, the conjunctiva of the right eye was found in an active state of inflammation, but quite devoid of sensation. Paralysis of

the face was now added to the renewed anæsthesia, both bounded by the before-mentioned limits. These symptoms were also attended by high febrile excitement; however, under treatment (leeches, blisters, fomentations, &c.), all the symptoms were much alleviated; but the inflammation of the eye still continued, and the deep tissues became involved, the iris being severely affected. Mercury, which had been employed for some time previously, was now administered more freely, but no salivation followed, although the mercurial fœtor was strong. Mr. Quain advised a continuance of the treatment adopted, especially the mercury. Under its use, after the lapse of a little time, sensation and motion began to return in the face, but the inflammation of the eye continued; and three distinct spots of puriform deposit made their appearance between the layers of the cornea, and gradually coalescing, engaged about two-thirds of it, so as completely to interfere with vision. The mercury was immediately discontinued, and in its place opium, quinine, iodide of potassium, with a bitter, were substituted. About this time the patient began to feel a dull pain in the brow, and could slightly elevate the upper lid, which had been hitherto immovable, though not from paralysis of the third pair of nerves; the eye could also feel a hot sensation from a solution of watery extract of opium dropped upon it. After three weeks' perseverance, the puriform deposit, which was never surgically interfered with, discharged itself externally, the iris became more natural, the pupil less angular, and the cornea less hazy; these beneficial changes being obviously connected with the return of sensation to the face, as in many instances noticed by Bellengeri, Magendei, Bell, and others. The patient from this time gradually recovered, and soon got well; a slight haziness of the cornea and an angularity of the pupil only remaining.

In similar cases it is important, with regard to prognosis, to be able to diagnose its centric or eccentric origin; whether it can be traced to a simple cold producing inflammation, as in the present case; or whether it arises from pressure upon the origin of the nerve, or from disorganization in some part of its course either within or without the cranium. The former class of cases are, usually, easily cured; the latter are almost hopeless.

March 24, 1849.

Francis Hird, Esq., President, in the Chair.

Case of Prolonged Retention of Urine, caused by Permanent Stricture. By Mr. Benjamin Travers. Mr. Travers was called to a young man for the purpose of giving the bladder some immediate relief. No water had passed otherwise than by drops for days previously, and the patient was dying rapidly from the local distress and bodily exhaustion. Mr. Travers operated in the following manner. The patient's chest having been raised with pillows, and the skin being incised in the median line, immediately above the pubic symphisis, a straight dropsy trocar and canula was next pushed into and through the anterior wall of the bladder. The relief was very decisive, but so sudden, as nearly to produce a fatal collapse. The patient was, however, presently restored by the administration of stimuli. The canula was tied into the bladder and stoppered; after some days it was removed, as it no longer hindered the escape of urine by its side, when the bladder became full. In about a month the wound had become fistulous, a small quantity of urine passing through it, the remainder flowing by the urethra. The patient's health being much restored, and the stricture not much enlarged by the use of bougies, Mr. Green, one of the surgeons of the hospital, cut down upon the stricture *in perinæo*, and so introduced a catheter into the bladder. After this, the patient gradually recovered.

The author remarked, that the first operation rescued the patient from immediate death, at a time when loss of blood must have proved fatal; and he quoted an instance wherein the patient died under such circumstances, before the bladder could be relieved by incising the perinæum. Puncture of

the bladder has had many able advocates from the days of Portean and Thiraud (1760) to the present time. Home, Abernethy, and Hey of Leeds, practised it repeatedly, and with great success.

The operation affords an interval of repose to the irritated urethra by diverting the passage of the urine for a time, during which that canal has been found so far capable of spontaneous restoration that the patient has subsequently recovered without any interference on the part of the surgeon, beyond the occasional use of a bougie. The circumstances of each case must determine the site of the operation; but when it is admissible, and the relief required only temporary, puncture *per anum* is usually preferred. The author referred to a case of puncture *per anum* recorded in the "Philosophical Transactions" for the year 1776, which shows that the canula may be withdrawn, with perfect impunity, immediately after the evacuation of the bladder, and without risk of dangerous extravasation.

The author recommended puncture in preference to the incision *in perinæo*, in cases of extreme urgency, where there is great exhaustion of vital power. He protested against the hazardous practice of forcing an instrument through an enlarged prostrate, when that constitutes an insurmountable barrier to the onward progress of a catheter. He read a letter from Mr. Cock, approving of the operation of puncturing the bladder per anum. Mr. Cock leaves the catheter in for a time; and, if irritation supervene, he passes a gum-elastic catheter through the canula, which is then withdrawn, whilst the catheter is retained in its place.

MISCELLANEOUS INTELLIGENCE.

Editorship of the Provincial Medical and Surgical Journal. The Committee of the Presidents and Vice-presidents appointed at the Anniversary meeting at Worcester, to fill up the vacancy occasioned in the office of Editor, by the death of Dr. Streeten, have unanimously appointed Dr. Ranking, of Norwich, and Mr. J. H. Walsh, of Worcester, conjoint Editors of the Journal of the Association. This appointment is subject to confirmation or rejection at the anniversary meeting, to be held at Hull in 1850. The great drag on this publication has been its fortnightly load of editorial matter, which, from the risk of displeasing their many masters, the writers must necessarily concoct in a too cautious, and often, therefore, insipid style. We would be glad to see good original memoirs, or translations of foreign papers, take the place of pointless leaders: and when the Journal requires to speak authoritatively, let it be in the form of Council Resolutions; for no editors can please the majority of 1800 paymasters, without adopting a tameness of style and a balanced criticism, which everybody dislikes. Much good has been done by the *Provincial Medical and Surgical Journal;* and, with the benefit of the history of the past, much more may be hoped for under the new editors, who are both able men, and well qualified for their duties.

The Medical Societies. The London Medical Society resumed its meetings, in Bolt Court, on Monday the 24th September, when a paper was read by Mr. Harvey, on Rheumatism of the Ear. The Westminster Medical Society holds the first meeting of its Session for 1849-50 on Saturday, October 6th, at 8 p.m. (17, Saville Row), when a paper will be read by Dr. Webster on the "Health of the Metropolis during the last six months; more especially in reference to the epidemic of Cholera." The Medico-Chirurgical Society does not meet till November; but the library is now open.

British Association. The British Association assembled at Birmingham on Wednesday, 12th September, under the presidency of Professor Robinson. It broke up on the 19th September. The next meeting is to be held at Edinburgh, in the first week of August, 1850. Sir David Brewster,

Principal of the University of St. Andrews, was elected President, and the following noblemen and gentlemen Vice-Presidents; the Earl of Cathcart, the Earl of Rosebery, the Right Honourable David Boyle, the Lord Provost of Edinburgh, (W. Johnson, Esq.), Sir Thomas Brisbane, Bart., the Very Rev. Principal Lee, Professor James Forbes, and Professor W. P. Alison.

Cholera in London. From the Registrar-General's return, it appears that the mortality from Cholera has rapidly declined. The deaths from all causes registered in London in the three weeks ending September 22, were respectively 3160, 2842, and 1981. The decrease has been exclusively in the Cholera deaths, which were 2026, 1682, and 839 in the three weeks. The deaths from Cholera, which, in the first week of September, were 300 and 400 a day, fell on the 19th to 110, and have not since exceeded 123.

Discovery of Peculiar Living Organisms in the "Rice-water" Evacuations of Cholera. Drs. J. G. Swayne and Brittan, of Bristol, having been for some time engaged, under the direction of the Medico-Chirurgical Society of that city, in the microscopic investigation of subjects connected with Cholera, state that they have discovered, in the rice-water discharges, and also in the atmosphere of infected places, certain living organisms, to which they are disposed to attach much importance in the etiology of Cholera. Dr. William Budd, of Bristol, in a letter to the *Times* of September 26, confirms their statements, and mentions that he has detected similar organisms in water procured from Cholera districts. Drs. Brittan and Swayne intend publishing the results of their researches: and, in our next number, we hope to be able to give a complete account of these discoveries. The plan pursued by Dr. Brittan has been to condense air taken from Cholera localities, and submit it to the microscope. As questions of priority may hereafter arise, we think it right to state, that the peculiar cells, which are supposed to be fungous in their nature, were first discovered simultaneously by Dr. Swayne and Dr. Brittan: after this, bodies, believed to be identical with those found in the rice-water, were discovered in the atmosphere by Dr. Brittan; and, in the next place, Dr. William Budd appears to have observed them in water. Dr. Snow had previously directed attention to water, as the great medium of the communication of the Cholera poison.

An Ostler turned Doctor, Surgeon, etc. A good idea is afforded of the laxity of the law by the following communication to the *Lancet* of September 15th. The case has many companions. The most lucrative practice at Brighton is said to be in the hands of a cobler, who drives a pair! "I was ill," says the correspondent of the *Lancet*, "at the renowned Ragland, and suspecting cholera, desired a doctor; one was sent for, and to my utter horror and astonishment I recognized in him the man who was industriously employed in putting-to the horses the last time I passed through the village; but who now had set up as a surgeon—an effrontery, I hope, without parallel. Fortunately I detected the cheat before I had swallowed his drugs, or there is no knowing what might have happened. Coleridge says, 'a rogue is a fool with a circumbendibus.' What is a quack such as this? I trust this letter will be the means of calling attention to this 'surgeon-ostler,' whose ignorance can hardly be less than his impudence; and that is sublime. Would not the Apothecaries' Act reach this man? It would be a merciful interference to stop the practising of impostors generally, but above all, such a barefaced example as this. I could but self-congratulate on my narrow escape from being victimized, and perhaps poisoned. Monmouth, August, 1849."

APPOINTMENTS.

BENNETT, J. Risdon, M.D., appointed Physician to St. Thomas's Hospital, in the room of Dr. HENRY BURTON, deceased.

GISBORNE, H. F., Esq., elected Surgeon to the Derbyshire General Infirmary, in the room of JOHN WRIGHT, Esq., resigned.

HILTON, John, Esq., elected Surgeon to Guy's Hospital, in the room of C. ASTON KEY, Esq., deceased.

OBITUARY.

BECKER, Dr. C. F., at Offenbach-on-the-Main, recently.

CLARKE, J. L., M.D., late Surgeon of H.M.S. Hydra, at Stockwell, Surrey, aged 40, on 1st September.

CRAWFORD, William, M.D., at Glasgow, on 25th August.

DREVER, Dr., in St. James's Square, aged 76, on 8th September.

DONEY, Richard, Esq., Surgeon, aged 46, of Cholera, on the 24th August, at Tavistock.

EDSALL, Richard Simon, Esq., in Bermondsey, of Cholera, aged 36, on 9th Sept.

GOLDNEY, H., Esq., Surgeon R.N., at sea, lately.

GRAVES, Robert, M.D., at Delapré House, Bridport, on 9th September.

HARROLD, Edward, Esq., Surgeon, at his residence, Cheshunt, Herts, aged 80, on 17th Sept.

LEMONIUS, Emil, M.D., of Berlin, at the house of his brother, in Bedford Street South, Liverpool, aged 33, on 10th September

MASON, Michael L., Esq., at 5, High Street, Newington, on 3rd September.

MORGAN, John, Esq., Surgeon, late of Royal Artillery, at Ordnance Hospital, Dover, aged 71, on 4th September.

POWER, William John, Esq., Surgeon, 91st Regiment, at Tipton, Staffordshire, aged 36, on 7th September.

ROBERTSON, William, M.D., late Surgeon 12th Reg. of Foot, at Edinburgh, on 23rd July.

RONEY, Cusach, M.D., in Dublin, aged 69, on 26th August.

ROSS, John, Esq. H.E I.C.S., Surgeon to the British Residency at Bagdad, on 19th June.

SCOTT, John, M.D., in Bedford Square, aged 66, on 30th July.

SCUDAMORE, Sir Charles, M.D., at his residence, Wimpole Street, aged 69, on 4th August.

TARLETON, Edward, M.D., A.B., Physician to the Bath General Hospital, in Dublin, after a few days' illness, aged 40, on 10th September.

THACKERAY, W. M., M.D., at Chester, at an advanced age, lately.

UDNY, John, M.D., Surgeon Superintendent of the Cholera Hospital, Toxteth-Park, Liverpool, aged 53, on 24th August.

WIGTON, George, M.D., at 14, Clerk Street, Edinburgh, on 21st August.

WILLIAMS, Joseph, Jun., Esq., at Bristol, of Cholera, aged 26, on 8th September.

YOUNG, Robert, M.D., at Camberwell, of Cholera, aged 47, on 18th July.

BOOKS RECEIVED.

ALCOCK on Cholera. London: 1849. ANNUAL REPORT OF CHEMISTRY. Part I. London: 1849. ANNUAL REPORT (19th) of Belfast District Asylum. Belfast: 1849. BADDELEY (Dr.) Harveian Oration. London: 1849. BILLING'S Principles of Medicine. London: 1849. BIRD (Dr. James), Contributions to the Pathology of Cholera. London: 1849. CALLAWAY on Dislocations, etc., of the Shoulder-joint. London: 1849. GAVIN'S Sanitary Ramblings. London: 1848. JOURNAL of Public Health. Nos. I to XXIII. London: 1847-9. LEE (Dr. R.) on Nerves of the Heart. From Philosophical Transactions. London: 1849. LETTER to the Lord Chancellor from Commissioners in Lunacy. London: 1849. OTTO (Dr. C.) Ledekraad i Pharmakodynamiken. Christiania: 1847. PROCEEDINGS of Westminster Medical Society. London: 1849. SELMER, Almindelige Grundsætninger for Daarevæsnets Indretning. Kjobenhavn: 1846. SHAPTER, History of the Cholera in Exeter in 1832. London: 1849. SMITH (Dr Thomas) on Hydrocephalus. London: 1845. SNOW on the Mode of Communication of Cholera. London: 1849. STEPHENS on Cholera. London: 1849. WINSLOW, Cholera considered Psychologically. London: 1849.

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ORIGINAL COMMUNICATIONS.

SYMMETRICAL SWELLING OF BOTH UPPER EYE-LIDS, RESEMBLING ŒDEMA, BUT DEPENDING ON A PROTRUSION OF THE ORBITAL FAT, NEAR THE LACHRYMAL GLAND.

By WILLIAM BOWMAN, Esq., F.R.S., Professor of Physiology, and General and Morbid Anatomy, in King's College, London; Assistant Surgeon to the King's College Hospital, and to the Royal London Ophthalmic Hospital, Moorfields.

THE following case excited some interest among those who saw its progress; and is published for the sake of whatever light it may throw on others of a similar character.

Henry John B., ætat. 16, a very healthy-looking boy, of ruddy complexion, reddish hair, son of a publican at Islington, came to the Ophthalmic Hospital, Moorfields, in February 1848, for a swelling of both upper eye-lids, which made his friends and himself uneasy by its unsightly appearance, though he had experienced no pain. The swelling was precisely alike on the two sides. It was almost limited to the outer half, or outer two-thirds of the lid, extending from the brow to within a sixteenth of an inch of the tarsal border, where it ceased by a groove, over which the relaxed and distended integument hung, as was very evident when the lid was viewed in profile. The swelling was reddish in the middle part, from fulness of the cutaneous vessels. It was quite soft, as if from œdema of the parts subjacent to the skin; and when pressed by the finger, no resistance was encountered, nor was any indentation left. The skin was thin, and slipped freely over the orbicularis muscle, nor was it easy to seize between the finger and thumb a fold of this muscular layer. When this was done, however, the feeling was that of redundant and loose cellular tissue beneath, and not of any tumour. Eversion of the lid showed the conjunctiva and subjacent tissue to be perfectly natural. Pressure behind the external angular process detected no tumour. The globe was in all respects healthy. Careful inquiry as to his general functions, only served to show that he was in excellent health.

He stated, that this swelling had come on gradually, on both sides together, during the preceding three months, without pain or tenderness, and that he was first made aware of it by the remarks of his friends. On one morning it had been so much worse that he could not open the lids on waking; but this had subsided during the same day, and now, for some weeks, the affection had been such as I then saw it. It appeared to be a symmetrical partial œdema of the lids, of which the cause was concealed.

Not understanding the case, I first directed some purgatives, with alterative treatment, and an evaporating lotion to the lids, and subsequently gave him diuretics; but the conditions remaining the same, I ran some slender threads through the swelling on one side only, as an experiment, and left them in for a week, hoping there might follow some condensation of the tissues in their tracks; but when they were withdrawn, the swelling remained the same, but the integuments were rather redder. He now for three months, under the advice of my colleague, Dr. Farre, resumed the alterative remedies, with a strictly regulated diet, but without any good result.

During my absence from town in September, my friend, who was seeing my patients, gave him iodide of potassium, and applied the tincture of iodine to the swollen lids; and the former I continued on my return, but left off the tincture, as it appeared to increase the tumefaction, by drawing more blood to the skin.

In November, he was just as in the preceding February. There was the same redness and bulging of the skin, and the same feel of the parts: neither tenderness nor itching. His health was good. I noticed that his temporal fossæ were unusually large, but, as it afterwards proved, this had no bearing on the case. I had also a drawing made; but a wood-cut would not convey the appearance, as the redness of the integument was even more conspicuous than its swelling.

The attempts hitherto made having failed to remove the swelling, they were altogether laid aside, and I waited till the spring, to see whether by that time any spontaneous improvement might not take place. At the end of April, the young man again presented himself, and being exactly in the same state as before, he was anxious that I should perform whatever operation offered a chance of improving his appearance. I accordingly determined to employ a modification of the operation for entropion, and to remove, not merely a horizontal ellipse of integument from the most projecting part of the swelling, but also a corresponding portion of the orbicularis muscle and of the fascia below it, and so to endeavour to consolidate the integuments with the parts beneath, which seemed the principal seat of the disease.

On the 4th May I operated on the left side. A piece of the integument was taken up with the entropion forceps, and removed with scissors to the extent of two-thirds of the horizontal width of the lid, and one-third its vertical depth. The orbicularis thus exposed was healthy, and was removed to nearly the same extent, by means of common forceps and scissors; a dense cellular fascia then bulged forward in the gap. This fascia being removed in its turn, a mass of fat, resembling the natural fat of the orbit, and about as large as an almond, fell forward in the opening, and I immediately removed it. It was not tightly embraced by any

capsule of the areolar tissue which surrounded it, but was divided into pellets, or small lobes, which moved freely on one another. It therefore had not the appearance of a fatty tumour. After its abstraction, there was no other tissue projecting, and I therefore closed the wound by sutures, and had the satisfaction of seeing it heal in four days, with an almost complete relief of the deformity.

A fortnight after, at his own request, I performed precisely the same operation on the right side, and with the same result. On cutting into the sub-muscular fascia, a pellet of fat appeared, and was cut away; a lobe of what seemed to be lachrymal gland was then exposed to view, but, showing no disposition to project, it was not interfered with. When the wound healed, the deformity was even more completely removed than on the other side, more care having been taken with the shape of the piece of integument excised. Two months afterwards, the lids hardly bore any trace of what had occurred.

Remarks. Probably most surgeons of large experience in eye diseases, have occasionally met with a case like the preceding, in which a swelling, resembling œdema, and of which the most obvious character was a distended and somewhat pendulous and reddened condition of the skin of the upper lid, occurred simultaneously on both sides, in a young person otherwise in perfect health. I have myself seen but two others besides this one, and in neither of these was the swelling known to depend on the protrusion of fat, although I have little doubt that such was actually the fact. In both, the upper lid on each side was similarly affected, and both were young subjects.

The true fatty tumour of the orbital cellular membrane is comparatively rare, and it occurs singly, generally at the upper or outer side of the globe, in the loose areolar tissue outside the recti muscles. When sufficiently large to cause a prominence of the skin, it admits of being felt as a tumour, although readily retiring into the orbit under pressure; and on everting the lid, it usually projects under the conjunctiva, where that membrane is reflected from the lid to the globe, near the outer canthus.

The following case will illustrate some of these points, and show the difference between the adipose tumour of the orbit and the affection above described.

Case. *November* 1846. Priscilla Glennie, æt. 17, has a small, soft tumour by the outer side of the right globe. It is moveable, seems flattish, lies against the globe, and presents an edge forwards. It is not visible unless she directs the eye inwards, but it then projects slightly between the lids. It is covered by the conjunctiva, which is whitish, and seems adherent to it. The white colour and the shape of the tumour make it look like the lachrymal gland, for which, of course, it is not mistaken. She first noticed it about four months ago, when it was of its present size. She had previously felt some pain in the eye on reading, etc., and this irritability continues.

26th. I removed the tumour through the conjunctiva with scissors, after drawing it outwards with forceps. It proved to be a simple fatty tumour, lying loosely attached in the areolar tissue, between the external rectus and the lachrymal gland. The wound was healed in a week, and

the movements of the globe, though slightly restrained at first in an inward direction, soon became quite free.

When the case of H. J. B. presented itself, I was far from suspecting the swelling to depend on fat. It had more the appearance of œdema than of anything else, although its limited size, and the colour of the redundant skin, were different from what I had seen in any instance of simple œdema. There was no tumour to be felt; neither was there any projection within the lids in any position of the globe. Its existence in the same situation in each orbit also discouraged the idea of there being any tumour. On referring to the principal modern works, and especially to those of Lawrence and Mackenzie, I could find no account of a corresponding affection. I do not pretend to explain the reason of the remarkable projection of the adipose tissue in so symmetrical a form on the two sides, and at the same period of time. The thought suggested itself, whether it may not have depended on some enlargement of the lachrymal gland, analogous to the chronic enlargement of the tonsils, sufficient to displace and thrust outwards a fragment of the fat in which the globe is cushioned. But, had this existed, there would surely have been a perceptible swelling in the region of the gland, after the removal of the fat, and also a tendency in the gland to fall into the gap, both of which were wanting. There was no undue projection or solidity of the gland when examined through the wound during the operation.

With respect to the treatment adopted by me in this instance, I am quite of opinion that the mere removal of a portion of skin would not have sufficed. The integument would have been still pressed on by the fat beneath, and the swelling would have remained, with only a smoother and redder covering. Yet it would have been a natural course enough to have confined the operation to the skin, and not to have gone through the orbicularis; and this, in fact, I witnessed in one case.

14, Golden Square, August 28, 1849.

ON THE HEALTH OF LONDON DURING THE SIX MONTHS TERMINATING 29TH SEPT. 1849;

MORE ESPECIALLY IN REFERENCE TO CHOLERA.

By JOHN WEBSTER, M.D., F.R.S., Consulting Physician to the St. George and St. James's Dispensary, etc.

(Read before the Westminster Medical Society, Saturday, October 6, 1849.)

HAVING read a paper,[1] towards the close of last session of the Westminster Medical Society, upon the Health of London during the previous six winter and spring months, compared, especially, with the parallel months of the former season, I now propose making some general remarks, in regard to the diseases which have prevailed in the metropolis during the second and third quarters of the current year, or, in other words, the six months terminating on the 29th September, 1849.

I undertake this task the more readily, from the circumstance that London, many parts of England, and also of the Continent, have been

[1] Vide Reports of Westminster Society in this Number, for the remarks of several physicians on Dr. Webster's paper.

afflicted by the return of a most fatal epidemic, whereby many thousands have rapidly descended to an untimely grave, and from which there has followed a greater mortality than has been witnessed in Great Britain during modern times. Such being the fact, it is the imperative duty of every medical practitioner to come forward, each in his own sphere,—as, I am proud to say, the profession have done throughout the country, when so much anxiety and alarm prevailed,—in order that the causes whereby the pestilence has been produced may be explained, its direful ravages alleviated, and future visitations mitigated or prevented. Such are some of my motives for now bringing forward a few of the more prominent and instructive Vital Statistics of London, belonging to the preceding six months.

Notwithstanding the recent unhealthy condition of the metropolis, and the unusually great mortality recorded during the current autumn, throughout April, May, and June of the present year, so far from London being insalubrious, the public health exhibited rather more favourable characters than in the corresponding months of 1848, the total deaths, from all causes, having then amounted to 12,945; whereas, during the same three months of 1849, the whole mortality recorded in London, was only 12,754; being a diminution of 191 deaths, or about one and a half per cent. in favour of the recent quarter—and this, it should be remembered, although 268 victims had been carried off by Cholera, and 240 by Diarrhœa. The diminution, speaking generally, chiefly occurred in deaths from typhus and scarlatina. In deaths from typhus, the decrease was 370; and from scarlatina, 322 fewer persons died, than in the same period of 1848; however, from phthisis, pneumonia, and bronchitis, a slight augmentation in the mortality was reported. Taking, therefore, every particular into consideration, it may be said that, up to Mid summer last, the health of London was not such as to create anxiety, had there not been a reappearance of Diarrhœa and Cholera.

Statements of a very different description must, unfortunately, now be made respecting the three months which terminated on the 29th of September last. Since the great Plague, one hundred and eighty-four years ago, such an extensive mortality has never been witnessed in the metropolis as that which has occurred during the present autumn; and which, compared with the parallel three months of 1848, is astounding.

I must here express my acknowledgments to the Registrar-General for his invaluable Reports. Without their aid, it would have been almost impossible to have pursued the present investigation, since to them I am mainly indebted for the facts and figures to which reference is often made. To Mr. Farr, the profession is also under great obligations: for by his arrangement and classification of the facts supplied by the deputy-registrars, the weekly reports have been made to convey most instructive and important information, especially in reference to the prevailing epidemic.

To exhibit the marked contrast betwixt the mortuary tables of the last three months, and those referring to the same period of the former year, it may be mentioned that instead of 13,503 deaths, then recorded from all causes, the whole number, during the same quarter of the present year, was 27,159 deaths, or a fraction more than double. This enormous, and, fortunately, during modern times, unknown

mortality in the metropolis, is not owing to any augmentation in the fatality of commonly-occurring diseases, but almost exclusively to Cholera and Diarrhœa, 13,114 persons having died from the first-named malady, and 2,697 from the latter; thus making a total of 15,811 individuals who became victims to these two diseases during the period referred to in this communication.[1]

History tells us of the Black Death of the middle ages. Reference is often made to the *Black Assizes;* and, in popular language, *Black Monday* is frequently mentioned. Now that the period of greatest danger seems happily to be passed, and the population likely soon to be restored to its ordinary state of health, the first seven days of September may well be called "the *Black Week* of 1849". During it, in London alone, 3,183 died, instead of 1,008, as in ordinary weeks; thus making the mortality, during the first week of the above month, three times the average, or at the rate of 454 deaths per diem, in place of 144, as in previous seasons. This increased mortality depended almost wholly upon Diarrhœa and Cholera, by which diseases 2,298 were carried off during the black week.

Notwithstanding the extraordinary augmentation of deaths during the past three months, it must be satisfactory to know, that, throughout the entire quarter, two diseases, which raged so fatally in the metropolis in the autumn of 1848, have proved much less fatal during the current year. From Scarlatina, instead of 1,560 deaths registered in London during July, August, and September, 1848, only 404 have occurred in the parallel three months of 1849, being a diminution of 1,156; Variola has also proved very mild during the whole of last summer, only 191 deaths having occurred from it throughout London since the 1st of last April, whereas 816 fatal cases were reported during the same six months of 1848, being a difference of three-fourths.

I propose—

First, to state a few data respecting the localities where the epidemic prevailed most fatally;

Secondly, to investigate the causes which apparently produced or influenced its appearance; and,

Thirdly, to consider briefly the proper measures to be employed to prevent, or, at least, to modify the violence of any future Cholera epidemic.

The symptoms, pathology, microscopic or chemical examination of the fluids and secretions, as well as the treatment of Cholera, must be left to a future occasion, and to other investigators; since, were I to enter upon these important topics, instead of a paper being adequate, a volume would scarcely suffice.

Localities in which Cholera prevailed. The worst localities were the low grounds adjoining the southern bank of the Thames. Notwithstanding the total population of this district being only about one-third of that on the northern side of the river, (or 580,000 inhabitants,) more than half the deaths by Cholera, or 6,708, out of the entire 13,114 re-

[1] Though I speak of *two* diseases, I do not deny that both were the results of the same epi*demic* influence; and perhaps modifications of the same malady.

gistered, took place in the southern division of the metropolis; which makes the amount of deaths, in proportion to the population, treble of that recorded on the northern side of the river.

Having adverted generally to the rate of mortality in the two great divisions of the capital, it now becomes interesting to notice the difference observed in several of the districts situated south of the Thames, as well for local comparison, as afterwards to contrast the amount of deaths there recorded with that met with in places lying north of the river, where a great discrepancy in the averages is often exhibited. For instance, in Lambeth parish, the deaths by Cholera were 1570 during the last six months; the ratio was therefore 1 in every 91 inhabitants. In St. George's, Southwark, where Cholera proved fatal to 811 individuals, one person died in every 64 of the population; whilst in Bermondsey, with its tan-pits, glue yards, tidal ditches, and other local nuisances, injurious to the health of the labouring population resident in that insalubrious part of London, not less than 704 persons died by Cholera, so that the very large proportion of 1 in every 56 inhabitants became victims to the pestilence. But even this excessive mortality was exceeded by the numbers registered in the parish of Rotherhithe, where 1 death from Cholera actually took place in every 38 inhabitants. Such an amount of deaths, seldom, if ever before witnessed, is most remarkable; and shows the extraordinary severity of the epidemic in that section of the metropolis.

In contrast with the great mortality met with in the southern districts, it is especially gratifying to mention one very important exception to the statements now made. Although Cholera proved exceedingly fatal, for several consecutive weeks, throughout the neighbourhood, Bethlem Hospital, with its numerous population, remained perfectly free from it, although situated in a district otherwise unhealthy, in reference to the recent epidemic. Respecting this large establishment, one or two circumstances may be briefly stated, as they seem suggestive of measures proper to be pursued elsewhere. At this Royal hospital, having a constant population of about 700 individuals, comprising upwards of 400 lunatics, besides the juvenile inmates of the house of occupations, officers, attendants, &c.; whilst there are weekly admissions and discharges of patients and others, whereby, during the last six months, perhaps 1000 persons have resided within its walls, *not a single fatal case* of Cholera has occurred during the entire year, nor indeed previously. This exemption, which I consider well worth recording, will however appear less surprising, when it is known that the ventilation of the hospital is excellent; the utmost attention is paid to cleanliness; the food is wholesome, plentiful, and regularly served; and there is a most abundant supply of pure water throughout the whole establishment, alike for baths, washing, and cooking. So copious, indeed, is the quantity, that in every water-closet, in consequence of a spring being attached to each door, whenever any person enters, the movement thus made simultaneously opens a valve, connected with a cistern, from which a torrent of water rushes into the seat; and this operation is repeated, when the patient retires. Further, through all the drains, water runs constantly; chloride of lime is also daily and freely used; and as every drain has been properly trapped, no odour ever prevails. A very deep

Artesian well—reaching to below the chalk—supplies the water required in the establishment, which a steam-engine pumps, at the rate of 70 gallons per minute, into the numerous reservoirs on the roof of the building, which are frequently cleansed, in order that the water may not be contaminated; hence, there is never any deficiency of this element, most essential in all institutions, but especially in asylums for the insane. It is, besides, proper to add that, during last spring, a common sewer, near one of the outer walls, which brought refuse from an adjoining street, was very properly covered over, lest the effluvia might prove injurious to the inmates. I have related these particulars respecting Bethlem Hospital, believing that they explain the immunity from Cholera, which this large institution has enjoyed during the epidemic.

It will be likewise interesting to state that, at another public establishment, in the management of which I also take some interest, in consequence of being under the same authorities as Bethlem, viz. Bridewell Hospital, in Blackfriars, a similar gratifying statement may be made, respecting its freedom from Cholera during the late outbreak, even although situated in one of the worst districts in the city,—having Fleet-ditch on one side, Puddle-dock on the other, and being also not far from Bride and Water lanes, where Cholera has proved specially severe; whilst there are, besides, burying-grounds near. Nevertheless, the disease has not yet appeared amongst the population, which averages about 130 persons, increased by changes to, perhaps, 200 individuals during the last six months. And this exemption has prevailed, notwithstanding that fatal cases of Cholera have recently taken place in houses almost abutting upon a prison, in which, it should be remembered, the inmates suffered from the epidemic of 1832. The recent immunity from Cholera is, doubtless, greatly owing to several circumstances of a similar kind to those mentioned in regard to Bethlem; but Bridewell, being a place of punishment, does not, of course, possess the same advantages; although the residents are well cared for, and treated according to the rules sanctioned by government for all prisons,—having substantial food, and good water. This exemption from the epidemic is the more remarkable, when we consider the class of persons to which the prisoners belong. They are committed under the vagrant act, are of all ages, and in every stage of poverty, filth, and frequently of disease; with constitutions, in many cases, shattered by debauchery, or enfeebled by destitution; but in Bridewell they are subjected to regular discipline, and are often better fed than when living at large. One important fact ought to be stated, as likely to have been instrumental in improving the salubrity of this prison; namely, that the ancient grave-yard of the hospital and precinct was closed about three years ago, by order of the committee, after having been used as a burying-ground for upwards of 250 years. This was not accomplished without expense, as the governors still pay an annual rent of 42*l.* 10*s.* to the original freeholder, besides incurring the payment of fees, &c. (from having to bury elsewhere prisoners who die in the hospital), amounting, sometimes, to 2*l.* 18*s.* per funeral.[1] However, the money is judiciously expended in abating such a nuisance; and I now allude to the closing of this grave-

[1] The following bill shows the items of extra expenses, in addition to those formerly and

yard as one instance of sanitary reform effected by a public body in the City of London, whose good example other parties would do well to imitate.

I now proceed to speak of the northern portion of the metropolis. In its population of 1,620,000, the deaths by Cholera were 6,406, or one fatal case in every 253 inhabitants. Thus, the average ranged about one-third of that in the districts south of the Thames, where one died in nearly every 86 residents. However, when more minute comparisons are made respecting particular localities, it is satisfactory to find, although the mortality by Cholera was considerable in the north-eastern part of the metropolis, it was by no means ever so high, even in the most insalubrious parishes, as in many of the southern. In Whitechapel, one death by Cholera occurred in every 156 inhabitants; in Shoreditch, one in every 134; and in Bethnal Green, which proved exceedingly unhealthy during the recent epidemic, the proportion was one death in every 120 persons resident within the parish. Again, in the City, although in the centre of an enormous surrounding population; notwithstanding, also, its Smithfield, Newgate, Leadenhall, and Billingsgate markets,—its very close crowded courts and alleys, its Fleet-ditches, Little Britains, and Alsatias,—*from its being situated, in many parts, upon a mound of gravel, having declivities in several directions, and possessing, comparatively with other places, good sewerage*, only one has died by Cholera in every 270 inhabitants; and of those who died, many lived in low, crowded neighbourhoods, such as Blackfriars and Whitefriars, and the immediate vicinity of the river.

Contrasted with the southern, north-eastern, and central parts of London, it becomes interesting now to notice the north-western districts, where Cholera has been much less fatal. Thus, in the parish of Marylebone, only one person has died in every 609 inhabitants; in St. James's, Westminster, only one death by Cholera has occurred in every 678 residents, and many of the deceased lived in crowded, confined, and often filthy habitations, such as Angel court, Peter street, and the close courts and alleys in the vicinity of Golden square. Lastly, in the parish of St. George's, Hanover square, one division of which (Hanover) is perhaps the most salubrious part of all London, only 121 persons have died by Cholera in a population of about 74,500; and it is important to add, that of these 121 deaths, 100 occurred in the lower wards adjoining Chelsea and the river, usually known as Belgravia, where nearly half the population of the entire parish reside. In addition

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still incurred, which the Governors of Bridewell paid for the interment elsewhere of one prisoner, in consequence of having closed the ancient burying ground of the Precinct.

To the Interment of * * * * *	£	s.	d.
Ground	1	0	0
Vicar	0	5	0
Clerk	0	3	0
Sexton	0	2	0
Grave-maker	0	2	0
Bell	0	7	0
Desk Service	0	12	0
Registering	0	1	0
Two Bearers	0	6	0
	£2	18	0

to these deaths, it ought to be also stated, that they do not include thirteen fatal cases of Cholera reported from St. George's Hospital, situated in the district. In contra-distinction to the mortality in the lower or Belgrave division, it is useful to know that, although several of the deaths occurred in the May Fair district, still, in the northern division, comprising the neighbourhoods of Hanover and Grosvenor squares, and hence called the Hanover district, the deaths by Cholera have been so few during the late epidemic, that not more than one person in every 1846 inhabitants has become its victim, the total number being only 13; which gives a very different result from that met with in other parts of London, but more especially in such places as Bethnal Green or Rotherhithe.

Believing that a short account of the thirteen cases which proved fatal in the northern division of St. George's parish may, in some degree, illustrate the laws regulating the appearance of the disease under discussion, I subjoin a few details regarding them. Most of the persons alluded to lived in confined streets and badly-ventilated dwellings. Seven were adults, and six were infants or children. Amongst the adults, two were butlers, one of whom had been subject to habitual diarrhœa, and had recently laboured under delirium tremens. Two were, a stableman, and a stableman's wife; the former lived in a yard subject to animal effluvia, and gases unfavourable to health, and had previously suffered from diarrhœa; the latter was poor and in want, and lately had typhus. The fifth case was a postman, living in a confined back yard; he was of an anxious disposition, and addicted to gin and bitters. The sixth was a carman, who also resided in a small, bad-smelling court. The seventh, the wife of a respectable tradesman, had hardly recovered from her confinement, which had occurred five weeks previously; one forenoon (when the epidemic was very rife) this woman purchased some bad plums, part of which she eat before dinner; afterwards, she dined upon a calf's head, and a tart made with the remainder of the plums; subsequently, she supped upon stewed beef-steak and oysters, both meals being washed down with her usual beverage. Diarrhœa and sickness came on early next morning; but, notwithstanding the severity of the symptoms, no medical practitioner was called in till near two P.M., when the disease had become so aggravated, that treatment proved inefficacious, and she died in the evening. The above history is one of the many which might be cited in proof of the danger attending such irregularities in diet, as might perhaps, in ordinary times, have produced little serious mischief. When such an epidemic of Cholera prevails, as that now leaving us, the whole population seem to be somewhat influenced by, or, at best, extremely susceptible to, its deleterious influences.

With regard to the six infants or children referred to,—one was the infant of the woman, the particulars of whose case have just been detailed: another, three weeks old, had, at the time, hydrodephalus; the third, aged eight weeks, had previously laboured under diarrhœa; whilst the fourth, four months old, had been similarly affected for five weeks: the fifth suffered from mesenteric glandular disease; and the sixth, aged ten months, had measles five weeks before, and was then also suffering from diarrhœa. All these particulars being known respecting the *thirteen* fatal cases met with in the Hanover district of St. George's *parish—which are obtained* from authentic sources—it seems surprising

that the deaths were so few, considering the irregularities of diet, the carelessness respecting hygienic measures, and the improper habits of many persons, to say nothing of the privations and destitution to which numbers in this, as in other parts of the metropolis, are unfortunately exposed. The comparatively elevated position of this part of London, its vicinity to Hyde Park, and hence freer ventilation, its generally wide streets, and open squares, the mound of gravel upon which much of the district is built, and the greater facility thus afforded for carrying off all refuse by the drains—however imperfect some of these conduits were recently reported to the Commissioners—have, doubtless, contributed to the fortunate immunity this locality has hitherto enjoyed; indeed, the local advantages now enumerated are so beneficial to the health of every inhabitant, that it is mainly owing to their absence (aggravated, of course, by the presence of other injurious influences) that the recent epidemic proved so prevalent and fatal in lower districts, devoid of similar advantages of situation.

The *sex* and *age* of the victims next merit attention.

More females than males have died of Cholera, but the difference is not great, as, in the whole 13,114 deaths, there was only about 9½ per cent. more women than men.

With regard to age, however, the peculiarity is much more striking. Upwards of half the entire number of deaths occurred in persons at the middle, or adult period of life. Speaking accurately, of the total deaths recorded from Cholera, 3,534 were under fifteen years of age, 7,565 from that period to sixty, and 2,015 beyond that age. More persons, however, died from thirty to thirty-five, or, at the prime of life, than at any other period.

Causes of Cholera. Lest further minute statistical details may seem tedious, I now proceed to discuss—although only in a general way—the causes apparently influencing the production of Cholera. This difficult subject cannot, however, be explained, as can some of the previous questions, either by historical or statistical references. Nevertheless, according to the views I entertain, the inquiry may be divided into four categories; namely—

1. Atmospheric. 2. Local. 3. Individual. 4. and lastly, The Exciting Causes.

Upon each of these heads, I propose to make a few cursory remarks; not expecting, of course, that, on such debateable points, the views enunciated will receive the entire acquiescence of other investigators. In case, however, any doubt should still prevail as to the opinions I entertain respecting contagion, I at once say, my views have been long decided on this question; and as the disease is now almost universally admitted to be *non-contagious*, the question is not mooted in the present paper, but left to others to discuss, should they feel inclined.†

† With much deference to Dr. Webster, we beg to say that, within our own knowledge, the experience of the present epidemic has led many physicians, who previously held other views, to consider the disease, though not virulently contagious, as communicable by fomites, and also by personal intercourse, in several ways. It is also our belief, that much of the spread of Cholera in London, and throughout England, during the present epidemic, has arisen from the careless manner in which the healthy have communicated with the sick, in consequence of the anti-contagion manifesto of the Board of Health. Editor.

1. Respecting *Atmospheric Influences* as productive of Cholera, although chemical investigations have yet done but little towards elucidating the question, there cannot be much doubt. In the Campagna of Rome, where the worst forms of fever prevail, or in other districts of the globe in which malaria is most virulent, not much satisfactory information, as to any important chemical peculiarity in the composition of the atmosphere of these districts, has been hitherto obtained or illustrated conclusively; although not the smallest doubt exists respecting its deleterious effects, in particular seasons, upon the human constitution. Undoubtedly, experimentalists and physicians (among others, Moscati) have said, that the atmospheric air, in some malarious districts, during the existence of pernicious fevers, has occasionally a greater specific gravity than that met with in other and more salubrious situations, and is found sometimes to contain a flocculent-looking matter or substance, having, it is reported, a fungoid or animal appearance. So much, however, yet remains to be explained and established by conclusive experiments, as well as observation, that we are not yet justified in speaking with much confidence on the subject, and ought to suspend our opinion, till we obtain further information. Somewhat similar conclusions may be entertained in regard to atmospheric influences in Cholera;—we see the results, but find it difficult to explain all the phenomena.

Recently, the *ozonic theory* has occupied considerable attention. The views are certainly ingenious, and deserve further investigation. So few facts, however, have yet been brought forward to establish the deductions, that additional experiments and inquiry are necessary to support the opinions promulgated, as to the absence of ozone in the air being the negative cause of Cholera. With the view of contributing some data in regard to the influence of the atmosphere, during the recent epidemic, I would direct attention to the very peculiar weather prevalent in August last, when the Cholera proved so very virulent, compared with that observed towards the middle and end of September, at which period the disease began materially to decline. In the former month, the air felt always oppressive and ungenial; the atmosphere being generally hazy, and it looked, at times, like a thick mist. Towards the end of August, but especially in the last week, London seemed as if constantly enveloped in a dense fog, which hung over the entire metropolis, whilst the air was always unusually dry, very little rain having fallen at any time, and none during the last week. Scarcely any wind prevailed, and then it was south-west, or southerly, with diverging currents above. The thermometer exhibited, frequent and daily, very extensive fluctuations; the lowest temperature of the month being 42, the highest 82, thus making a difference of 40 degrees; but it is also important to notice (as I observed the same feature in the weather of 1832, when the Cholera prevailed so severely), that there often existed a great difference between the heat of the night and the day-time. In some nights, the temperature even ranged 30 degrees lower than in the preceding day; and throughout the entire month, the amount of electricity was particularly small, whilst the quantity of rain that fell, measured less than had been known for thirty years.

In contrast with this account of the very unusual atmospheric pheno-

mena observed in August, it is instructive to know, that during the greatest part of September, especially when the Cholera began to decline, the meteoric conditions were very different. Thus, early in the month, flashes of lightning with heavy rain supervened. On the 11th, there was a thunderstorm and hail, with a clear star-light evening, followed by deluges of rain, during the whole night. For four days afterwards, frequent squalls of wind prevailed, with occasional showers, which were accompanied by lightning and thunder on the 12th. During the third week, the atmosphere was generally clear, and often cloudless; there was much wind in the early part, mostly north or northerly, with altogether different phenomena from those observed in August. The barometer was generally high, having continued at upwards of 30 inches from the 14th to the 21st of September; whereas, during the most fatal period of the epidemic, it stood sometimes an inch less. Showers fell on the 21st, and much rain during the whole of the 23rd; the weather was stormy on the 29th, with heavy rain and electric currents; the temperature, throughout nearly the entire month, ranged much lower than in August, and there was less variation between the heat of the day and night; the difference was 26 degrees on one occasion, but latterly it was frequently considerably under that amount, and usually varied from 15 to 18 degrees. I have particularly alluded to this variation of temperature between the night and day-time, because I consider it of importance in regard to Cholera. According to my views of disease, this marked difference in the temperature not only materially influenced the accessions of attacks, but explains why so many persons, during the late epidemic, were seized in the night; as likewise the greater severity of the symptoms, and dangerous character of the malady, which then supervened. This peculiar feature in the recent epidemic, of coming on so often during the night, or early in the morning, has been repeatedly noticed by medical practitioners, although the remark applies also to other maladies. Cold nights are always most injurious to the human frame, as every one knows, especially after a high range of temperature during the previous day; not only is disease thus frequently induced, *cæteris paribus*, but the circumstance also accounts for the number of deaths which often take place towards sunrise, or early in the morning, at which period the temperature of the surrounding air often falls one or two degrees within a very short period of time; whereby the sudden coldness then produced acts with greater energy upon the system, particularly should the individual be asleep at the time, the danger being always greater under such circumstances.

2. In reference to the *Local Causes*, which have materially contributed to the dissemination of the epidemic, it appears, from the statistical data already adduced, that low, damp situations, especially those near the banks of the river, have invariably proved the most insalubrious. The vicinity of common sewers and open ditches, containing putrified materials, the neighbourhood of constantly turned-up grave-yards and of cesspools, the defective means for carrying away decaying animal and vegetable exuviæ, the absence or deficient supply of good water, the want of free ventilation of pure air, filth, overcrowding, and similar abominations, unnecessary to particularize at greater length, have all acted as efficient local causes, indubitably tending to make any place—

even though otherwise salubrious—the nidus of epidemics, whether scarlatina or typhus, but more especially Cholera. This truth is now so incontrovertibly established by most ample experience, both in London and elsewhere, and so well known to medical men, that to discuss such topics any further, seems superfluous.

In confirmation of the opinion, that low localities are peculiarly the seats of Cholera, I may mention an instructive fact, having reference to its recent outbreak in the Salpêtrière of Paris. This institution is situated near the banks of the Seine, and in rather a low situation. The population is upwards of 4,500, chiefly aged and infirm females, paupers of the department, of whom 1,300 are insane. At this very large establishment, one-third of the whole inmates died by the recent epidemic; the ratio of deaths amongst the lunatics being nearly twenty-three per cent. At Bicêtre, on the other hand, which is the great poor-house and lunatic asylum for the male paupers of Paris, having nearly 4,000 inmates, very few persons (comparatively speaking with the Salpêtrière), died by Cholera; whilst the amount of deaths, from the same cause, amongst the lunatics, was under five per cent., or less than one-fourth the proportion observed amongst the insane females. The chief reasons of the above discrepancy seem to be sufficiently obvious. The Bicêtre is situated on high and dry ground, a few miles distant from the Seine, overlooking the capital, and so constructed, that the winds of heaven blow freely through the numerous courts, and round the buildings; whilst it is likewise free from several noxious agencies elsewhere prevalent.

3. *Individual Causes* next engage our attention. In this part of the inquiry, I shall likewise be very brief, presuming that there cannot be much difference of opinion amongst medical practitioners, in regard to most of the points to which I may allude. Amongst the causes comprised in this category, must be indubitably classed dissipated habits, broken-down and debilitated constitutions, previous disease, personal uncleanliness, deficient nourishment, neglect of premonitory symptoms, deranged or defective general health, misery and destitution,—in short, whatever impairs the physical strength or moral energies of an individual.

4. Among the *Exciting Causes* I would enumerate bad water, decaying or putrid food; unripe, raw, or decomposing vegetables; salted provisions of bad quality; intoxication and dissipation; exposure to the night-air in insalubrious localities, especially if asleep; great bodily fatigue; strong purgative medicines; fright; all mental emotions of a depressing character; and those influences which suddenly depress the nervous system, and debilitate the corporeal frame.

I have now succinctly enumerated some of the causes, which mainly, in my opinion, contributed to the recent spread of Cholera. Undoubtedly, by many, its appearance has been ascribed more positively to certain special influences. Thus, some have considered that the epidemic was chiefly owing to the absence of ozone from the air. Several have attributed it to a particular condition of the air, not yet described satisfactorily; others, to the presence of animalculæ, or fungi, in the water, the secretions, or in the atmosphere. Bad water, bone-houses, grave-yards, *cesspools*, open sewers, drains loaded with fœtid matter, and similar

abominations, have respectively been considered as the paramount, if not the exclusive causes of the epidemic. Lastly, a few authorities still maintain that contagion is the principal agent.

Respecting the origin of epidemic diseases, many deduce conclusions from a too contracted view of the questions at issue, and of the facts involved. Influences, or agents, which separately have only a slight effect upon the system, often, when combined, prove active causes in producing disease. Here, we may advantageously take a hint from the curious results met with in the physical world, and which the investigations of chemists have so often demonstrated. Elements may produce little or no action upon the human frame; but the same bodies, if combined in a certain form, may prove extremely deleterious. For instance, when carbon, hydrogen, or nitrogen, are applied separately to a living animal, each seems inert, or, at least, produces very little effect: but they may combine, in definite proportions, according to chemical laws, to form prussic acid, which operates as a most violent poison. Such examples of the action of bodies composed of elements separately almost inactive, but, conjoined, most powerful, demonstrate how careful medical men ought to be, in ascribing diseased action to special agents or influences.

Speaking generally, I consider Cholera to be amenable to somewhat similar laws to those which regulate the accession of pernicious intermittent fevers in certain districts and during particular seasons. There is usually a combination of influences causing the disease; and, although it has now been attempted to point out some of the most efficient causes producing Cholera, much yet remains to be ascertained, so as fully to explain the various phenomena.

Preventive Measures. As the epidemic has not yet altogether ceased, and may again recur, I now proceed to make a few remarks upon the means most likely to prevent, or modify the virulence of, subsequent epidemics.

First, then, I would most decidedly say, *intramural interments must be interdicted* throughout the kingdom. Drainage must be extended in densely-peopled neighbourhoods. Slaughter-houses must be removed from the crowded haunts of men; and public markets properly regulated, frequently cleansed, and, wherever practicable, placed in open, airy situations. Common sewers must be scientifically constructed, so as not to act as the conduits of disease. The Thames must no longer continue to be the "cloaca maxima" of London, especially as its filthy contents, by quadruple diurnal agitation, are rendered in a higher degree noxious to the neighbouring inhabitants, and to the many thousand persons, who daily use the river as a metropolitan thoroughfare.

Habitations in low, damp, and confined localities should be avoided, or made more salubrious by artificial means. The physical well-being of the population, especially the poor and labouring portion, must be improved. The light of the sun, and the admission of pure air into every dwelling, ought not to be taxed or impeded, but in every manner promoted, especially by a Government endeavouring to improve the public health. As the Imperial Legislature has sanctioned the importation of all kinds of food into the country without any duty, in order to increase

the sustenance of the community, so ought it to permit the untaxed entrance of light and pure air, both being as indispensable as corn and mutton to the healthful maintenance of animal life and mental vigour. Good water should be supplied for every purpose, more particularly in densely crowded districts; and localities known as the hot-beds of disease, must be cleansed from all abominations.

Many other important sanitary measures might be mentioned, were their necessity not so obvious. This much, however, I would here strenuously assert. All nuisances, whether public or private, must be abated, and vested rights and individual interests must give way to the health of communities. On these points, "salus reipublicæ" is "suprema lex;" and, as on such questions there can be no mistake, there ought assuredly to be no compromise.

Exemption of Classes. As a counterbalance, in some degree, to the sad mortuary details contained in the previous pages, it is gratifying to state, that throughout the entire population of London, during the prevalence of the recent epidemic, several marked exceptions have been noticed in the exemption of individuals from Cholera, as well as in the rarity of the disease amongst various sections of the community. Several instances which have come under my notice, appear worth relating.

The military in the metropolis, generally speaking, never were in a better state of health than during the epidemic, although a few fatal cases of Cholera occurred in different regiments. Respecting the fatal instances amongst the troops in London, it is both instructive and important to know, that in one regiment, which lost six men by Cholera, five came from a battalion quartered in the Tower, and only one from the other division occupying a barrack at the west-end. It is likewise worth adding, as an illustration of the influence which locality and individual circumstances exert in producing the disease, that one of the severest cases which a medical officer in the Guards met with, recently occurred in a soldier who had absented himself, without leave, from his barrack in the western part of London, and had passed two days in drinking with a sailor, in Ratcliff Highway. From this unhealthy district, the soldier was brought westward in custody, and placed under confinement, where the malady very soon manifested most severe symptoms. This patient recovered, although he continued in a precarious condition for some time; and, probably, had he remained for a longer period in the tainted district, or had not been placed at once under judicious treatment, the issue might have been different.

Again, amongst the metropolitan police, which, exclusive of the city force, comprises 5,600 individuals, notwithstanding the laborious duties which they often have to perform, their frequent exposure to the night air in all weathers, and especially in the most insalubrious districts, the sickness and mortality was less than might have been expected. According to the return which my friend Mr. Fisher, surgeon-in-chief to the police, has kindly favoured me with, only twenty-seven policemen have fallen victims to Cholera during the recent outbreak; that is, one in every 207 members of the force, or about ·5 per cent. The particulars respecting the localities in which these twenty-seven deaths

occurred are likewise of importance, from being analogous to those observed amongst other portions of the population. Thus, of the total fatal cases recorded amongst the metropolitan police, twenty, or three-fourths, occurred south of the Thames; eleven of whom died in Southwark or its vicinity, and three in Lambeth; five were reported from the north-eastern districts; two died in Westminster, one being on the Thames; whilst *not a single fatal case by Cholera was met with amongst the whole police force stationed throughout the north-western districts of the metropolis.* No statements can be more conclusive respecting Cholera and its propagation, than those now made respecting the military in London, but more especially the metropolitan police, consisting almost exclusively of stout, healthy, and mostly young men, placed under the same discipline and regulations. The deductions to be drawn from such data are self-evident.

Having already alluded to Bridewell, it may appear superfluous to speak of other prisons; nevertheless, I must notice two other similar establishments. The first is the Cold-bath Fields House of Correction—the largest jail in England—in which the regulations, sanitary measures, dietary, &c. are carefully attended to by the authorities. At this prison, notwithstanding there being usually about 1200 inmates, not a single fatal case of Cholera has occurred during the recent epidemic, even although the disease prevailed in the neighbourhood; and it must be added, that the prisoners were otherwise quite as healthy as at any previous period. Indeed, so little sickness has been recently met with amongst the numerous population of this jail, that last week only two cases of illness were under treatment in the infirmary. The other jail referred to is the Model Prison, Pentonville, in which also no fatal case of Cholera has occurred amongst its inmates, amounting to about five hundred individuals. This immunity is, no doubt, owing to its open, airy, and elevated position, its good discipline, its scrupulous cleanliness, and plentiful supply of excellent water, much of which is pumped up from a well in the establishment.

From the workhouses in the metropolis much useful information might also be adduced. I will, however, only allude to two, the first being situated on the low ground south of the Thames, the other on an elevated position in the northern district. The former, or St. George's workhouse, Southwark, which contains, on an average, 400 inmates, is situated in the middle of one of the worst parts of the Borough, namely, the Mint. This locality, besides being very insalubrious, is inhabited by the very lowest, if not the most wretched, class of society, and amongst whom deaths by the recent epidemic have been exceedingly numerous. Nevertheless, among the ordinary residents in this establishment, only eight fatal cases of Cholera have occurred; and it is instructive to know, that these were chiefly the aged, infirm, and sickly. It was not so, however, in regard to the persons admitted from the neighbourhood; the fatal cases recorded having been principally in that class of patients. This rarity of deaths amongst the resident paupers indubitably depended upon similar causes to those detailed in other public establishments: namely, the house is well ventilated, even although an old building; it is kept very clean; the food is abundant and nutritious; whilst the water is of good quality, and plentiful. The other

workhouse to which I would also allude is that of the parish of Islington, situated on elevated ground, well drained, as also properly ventilated, and where the food is good, with water supplied by the New River. In this institution, having about 350 inmates, only two cases of Cholera have occurred, although the residents comprise many paupers of broken-down health, from years of suffering, privation, and disease. Respecting the two fatal cases of Cholera reported from this workhouse, it is instructive to state, that one was sixty-three years of age, with a chronic cough, swelled legs, and a bad constitution; the other had lived for a short time in the same house with a person who fell a victim to Cholera in an infected district, from whence she was brought, and died in the parish Infirmary.

Another illustration of immunity from Cholera, among a class of persons likely to be attacked, may be derived from the St. George and St. James's Dispensary, to which I am attached. At this institution, out of 3,252 patients, almost exclusively living in the upper wards of these two parishes, and attended by the medical officers during the by-gone six months, not a single fatal case of Cholera has occurred; whilst it is also remarkable, that fewer persons labouring under ordinary diseases have been admitted during the last three months, especially in September, than throughout the previous quarter, comprising April, May, and June.

Lastly, I would mention, that, at insurance offices, which comprise many thousand persons of the middle or upper classes of society, and on whose lives millions of money are now insured, notwithstanding deaths by Cholera have been reported at particular offices, the general mortality, from all causes, amongst the assured, has even ranged less than usual. At the London Company, to which I am the medical adviser, not only has no death by Cholera been reported, but the casualties from ordinary maladies have fallen under the average. And as similar statements have been made to me by other parties well able to give information—especially by Mr. Neison, an authority on such questions,—the opinion now advanced must be correct.

The various statements made regarding the exemption of particular places, and the immunity of different persons from attacks of Cholera are instructive, and deserve further investigation; more especially as the epidemic may, I much fear, recur at future seasons. The malady has done so in other countries, as also in England, and may do the like again, even with similar, if not with aggravated virulence. Many authors might be referred to respecting the history and previous prevalence of Cholera, but I will only now allude to Sydenham. According to him, Cholera Morbus was not only very common, but exceedingly fatal, in his day, as also previously; indeed, this epidemic disease seemed like a plague, from the mortality it occasioned; nay, it was even called, in common language, "Plague, or Gripings in the Guts". From it, during the year 1669, according to the above celebrated physician, not less than 4,385 persons died in London exclusively, which large mortality, in a population of about 674,000, makes the ratio of deaths nearly the same as during the present year. In 1670, the deaths from the same *cause amounted* to 3,690. The disease reappeared frequently after-

wards, coming on generally about the close of summer, or towards the beginning of autumn; in fact, similar to the recent epidemic; or, to quote the quaint expression of Sydenham, when describing the Cholera Morbus then so virulent, "it recurred as constantly as swallows in the beginning of spring, and cuckoos towards Midsummer."

Indubitably the word Cholera is not mentioned in the old Bills of Mortality, which I carefully examined at the British Museum. The expression in these reports is, "Gripings in the Guts", being, doubtless, the vulgar term, and hence adopted by the parish clerks of London when drawing up their certificates, instead of the more correct appellation contained in the works of Sydenham. This epidemic malady continued to prevail throughout the remainder of the seventeenth century, although to a less extent than at previous epochs. During the early part of the eighteenth century the complaint declined considerably; so much so, that exactly one hundred years ago, or in 1749, otherwise a very unhealthy year, seeing that 25,516 persons died in London, of whom 2,625 were carried off by Small-pox, only 148 persons died of the epidemic so common in the time of Sydenham. Subsequently, the disease became still more infrequent; and, in 1793, it had almost disappeared; as in that year, according to the old Bills of Mortality, the number of fatal cases registered, from the same cause, had fallen to fourteen, in a total of 21,749 deaths reported to have taken place from all diseases, amongst upwards of one million inhabitants, at that period resident in the metropolis.

21 Brook-street, October, 1849.

BIBLIOGRAPHICAL RECORD.

PRINCIPLES OF MEDICINE; comprising General Pathology and Therapeutics, and a Brief General View of Etiology, Nosology, Semeiology, Diagnosis, Prognosis, and Hygienics. By CHARLES J. B. WILLIAMS, M.D., F.R.S. pp. 533. London: 1848.

(Concluded from p. 856.)

HAVING completed the purely pathological portion of his work, DR. WILLIAMS, in the seventh and last Chapter, after alluding to PROPHYLAXIS, as being connected rather with special pathology, treats of the important subject of HYGIENICS. The value of such an addition is unquestionable, when we reflect that the duty of the conscientious practitioner consists no less in the prevention, than in the alleviation of disease; and that the restoration of health very frequently depends, in a great measure, on being able to direct and control those hygienic circumstances, which have originally impaired it, or are continuing to exert a deleterious influence.

The subjects treated of in this chapter are arranged under the following heads: *Food*; *Clothing*; *Temperature*; *Air*; *Exercise*; *Mental Occupation*; *Sleep*; and *Excretion*.

FOOD. This should be "digestible, nutritious, and calefacient; and the articles which duly comprise all these qualities will be the most wholesome food." The importance of a due combination of albumen, oil, and sugar or starch, with water as their diluent, is exemplified by some remarks on the common articles of diet.

Wheaten bread contains the albuminous and amylaceous principles, and only requires the addition of butter to fit it for moderate nutrition. "The goodness of bread," Dr. Williams observes, "depends not only on the character of the grain from which the flour is obtained, but also on the mode and degree of its fermentation and baking. If fermented with leaven instead of yeast, or if over-fermented, acetic acid is generated, and the bread is sour; and this is the common fault of bread in large towns where the supply of yeast is insufficient, and it prevails universally on the continent. This evil is avoided in the unfermented bread, which is rendered porous by an effervescence of carbonic acid gas, caused by an admixture of carbonate of soda with the flour, and hydrochloric acid with the water, of which the bread is made. When well prepared, such bread is very sweet and free from acidity; but, unless carefully prepared, it is liable to be heavy, and, like imperfectly fermented bread, is then unfit for mastication. Bread insufficiently baked is glutinous and indigestible, and much of the same objection applies to quite new bread which has not dispersed its moisture. These defects may in great measure be remedied by toasting the bread in thin slices, which has also the advantage of dispersing much of the acid from sour bread. Very white bread is objectionable, as being less nutritious (having less gluten), and more constipating, than that made with less refined flour; but the coarse material commonly sold as brown bread errs to an opposite extreme, in containing a bran so coarse as to be irritating to many stomachs. Good country bread, fermented with yeast, and well baked, presents the kind most generally wholesome." (pp. 471-2.)

Meat contains albuminous, oily, and gelatinous principles, besides creatine and other extractive matters, and requires to be combined with vegetables or bread, to render it suitable to the palate and stomach. The relative merits, as articles of diet, of the various kinds of animal food are pointed out; and the following plan of diet is recommended as being suitable, with some exceptions, to the majority of healthy adults.

"*Breakfast* at from 8 to 9 A.M., of bread or dry toast, with a moderate quantity of butter. One or two new-laid eggs, boiled three minutes and a half; or a little cold chicken, or game, or even a mutton chop, may be added for those who use much bodily exertion. Beverage, one breakfast-cupful of *café au lait*, that is, clear strong infusion of coffee, with scalded milk, in proportion of one-third of the former to two-thirds of the milk. Cocoa, deprived of fat, or thin chocolate, with milk, may be substituted.

"*Luncheon*, at from 1 to 2 P.M., may consist of a small basin of good shin of beef soup, with vermicelli, rice, or toasted bread in it. If meat have been taken at breakfast, a biscuit, or piece of bread and butter, or small sandwich may suffice for luncheon; wine and malt liquors are generally better avoided at this time, unless dinner be taken at this hour.

"*Dinner*, at from 5 to 7 P.M. (the later hour is not recommended, but is often unavoidable.) Wholesome fresh meat and vegetables, well but plainly cooked, served hot, carefully proportioned, properly masticated; varied from day to day, with simple additions of fish, and moderate quantities of farinaceous or fruit puddings. Highly seasoned dishes, pickles, salted and dried meats, rich and heavy pastry, and cheese, except as a mere relish, to be excluded from a table professing wholesomeness. Beverages: sound white wine (sherry or good Marsala, from one to three glasses), which is generally better mixed with water; or sound Sauterne or Moselle, unmixed. Those who use much exercise may substitute sound malt liquor, bitter ale being the lightest, and good porter or stout the more sustaining. Half a pint is generally as much as is good for the health. Many thrive well, especially in the country, without any fermented liquor. If water is taken, it should be in moderation, otherwise it may interrupt digestion. Some find warm water, or milk and water, a pleasant beverage. The habit of taking wine after dinner is one of luxury, not of health, and all that can be said of it in hygienic instructions is—the less the better. The practice of taking a little fruit at the same time is not equally hurtful, provided by its quality or quantity it do not excite indigestion.

"*Tea*. The English custom of taking tea, or a simple warm liquid meal three or four hours after dinner, is a very salutary one, and probably disagrees only with those who dine too late, or overload the stomach at dinner. The purpose of the warm liquid is to assist in the separation and absorption of the chyle from the chyme, which takes place at this period. And it is obvious that it would interfere with this process to introduce solid food into the stomach; therefore little or nothing should be eaten—certainly not quantities of buttered toast, rich cake, and the like. Two or three moderate cups of black tea, with a little milk and sugar, forms a wash to the stomach to carry away the taste and smell of dinner, and remove all acrid materials, left by digestion, which might disturb that rest for which the hour now approaches." (pp. 473-4.)

An early dinner would be preferable, if it were possible to devote sufficient time to the meal, and to rest after it. If it be purposely made light, it necessitates supper. To avoid the symptoms of indigestion, which are liable to arise from a late supper, it should be light, and taken an hour or two before going to bed. "Those who use much exercise may take with advantage a little light meat, chicken, game, white fish, or lightly-dressed eggs, with a small quantity of wine and water, or sound beer (if this do not disagree). Those who require less sustaining food, as sedentary, plethoric, or inflammatory individuals, will find a more suitable supper in a light farinaceous pudding, bread and milk, or oatmeal porridge; the last being especially useful in persons of costive habit. A few currants, raisins, or a little apple, with farinaceous puddings, counteract their constipating tendency." (p. 475.) Regularity in the hours of meals is of great importance, and long fasts should be avoided. Irregularity and fasting act injuriously, both by disappointing the stomach in its expectation of food at regular intervals, and partly by pro-

ducing inanition. "When it is borne in mind that food is intended, not only to supply the slower process of nutrition and reparation of the body, but also to afford materials for the immediate protection of the blood against the chemical action of the oxygen absorbed in respiration, and of the stomach against the chemical action of the gastric juice,—the injurious tendency of long fasts will become apparent, and the more so in proportion as the small capacity of the digestive powers limits the quantity of aliment taken at a time." (pp. 475-6.)

With regard to Clothing, much valuable instruction may be derived from considering the various instinctive and natural provisions in the lower animals for changes in their clothing, to suit variations in seasons and weather. We find, in them, the warm or winter coat formed in the autumn, more rapidly when it is cold; and slow to come off in spring, when the approach of summer is tardy. Again, cold causes a partial erection of hairs and feathers, which increases the thickness of the covering, and retains in its interstices a portion of warm air; while warmth causes hair and plumage to lie smooth, and to form a thinner covering. Some animals employ additional means: horses in winter often roll in dirt and mud. This gives the coat thickness, and power to resist cold. Birds render their plumage waterproof by means of oily matter, and they appear to get rid of it in warm dry weather, by means of rolling in the dust: some land-birds delight in washing under the same circumstances. These facts, says Dr. Williams, "are not devoid of instruction in regard to the dress of human beings, who should learn to cover their nakedness under the guidance of experience and reason, which may be better or worse than instinct, according to whether they are well or ill exercised. It argues little for the boasted superiority of man's reason, if it do not guide him to means more effectual in resisting the hurtful action of external temperature, than those instinctively possessed by the lower animals; and yet there can be little doubt that none of these suffer from cold, wet, and atmospheric changes, to the degree in which human beings do. In truth, reason and common sense are too frequently set aside by foolish habits originating in vanity, fashion, caprice, prejudice, indolence, ignorance, or some such evil influence, and disease and infirmity are the penalties incurred by folly." (pp. 477-8.)

The means of guarding against external cold, or wet and damp, are next pointed out; and the propriety of observing caution in the change from winter to summer clothing, and *vice versâ*, is inculcated. The circumstances or conditions of the system, which require additional warm clothing, are referred to; and Dr. Williams here observes: "Under the influence of these conditions, the feeling of chilliness, particularly on the surface and in the extremities, is an indication of the need of more clothing; and if this be used to prevent the sensation of cold, it will often counteract those disturbances of the circulation and internal congestions to which the weakened body is liable, and which lay the foundation of many diseases." (p. 481.)

The head and face require but little the protection of clothing. The final cause of this is the necessity of a free communication with the exterior for the senses, breath, speech, and nourishment. The physiological cause of the greater power of the head to resist cold, is probably to be found in the greater size and less varying calibre of its blood-vessels. But during exposure to the air, and during the night, it is proper to use such light covering as may prevent checking the perspiration of the surface and the secretion of cerumen. Dr. Williams considers India-rubber web, gutta-percha, and similar materials, as valuable means of resisting wet and cold, but prefers their being worn as external clothing,—at all events not so near the skin as to check the escape of perspiration.

Air, as a hygienic agent, is referred to in its states of *dryness* and *moisture*, *temperature*, and *purity*. The general effect of a very dry air is the production of rapid evaporation and high electric tension. Tonicity is usually

augmented; while the desiccating, and probably the electric action of the air, induces a degree of excitement, beneficial in those of relaxed habits, but often detrimental in the irritable or sanguine. A very dry air, with heat and motion, impairs cutaneous perspiration, and excites various kinds of cutaneous inflammation. Moderately dry and warm air is salutary, "by facilitating the purification of the blood in the lungs, by improving the tone of the moving fibre, by checking tendencies to excessive secretion, and by counteracting various septic processes both within and without the body, which are generally promoted by humidity." The physical conditions with which a dry air is most permanently connected are "a dry soil, from which the water of rain and dew speedily drains off, or evaporates, as on rocky surfaces; or sinks deeply, as in sand, chalk, and light gravel. The nature of the subsoil is therefore of the greatest importance in determining the character of the air of a locality; and the kinds above-mentioned are the most favourable to permanent dryness of the air. A declivity or undulating surface, and a freedom from dense foliage and very luxuriant vegetation, contribute also to the dryness of a neighbourhood, and generally thereby to its salubrity. (p. 484.) East winds are usually dry; but the east and north-east winds are often injurious from their bleakness and penetrating coldness; and the south-east, from its sultry and oppressive quality in summer. It seems also, that some of its peculiar effects are connected with electric tension; and it should not be forgotten, that "during the prevalence of this wind especially, the air becomes surcharged with animalculæ tribes, and certain epidemic diseases, especially Asiatic cholera, and sometimes influenza, make their greatest progress." (p. 485.)

Damp or moist air contains less oxygen, and hence has less vivifying powers; it also favours the processes of decomposition and infection; and may be contrasted in other points with moderately dry air. A warm moist air is universally relaxing; while cold damp air is even more pernicious in its effects. From the latter result various aberrations from the normal chemistry of the body, producing retention of lactic acid, formation of oxalic acid, rheumatism, neuralgia, tubercles, and many other affections. Dampness of the air may arise from the permanent retention of moisture on or near the surface of the ground; or a house may be damp from its own materials. "Wet weather and damp winds, such as the south-west, are less injurious causes of humidity, because less permanent; but their influence is often manifest during their continuance, and always most so in localities that are damp from other causes. The air of the sea-side, even on the south-west coast, although generally abounding in humidity, is far less injurious than that of damp places inland; apparently because much of the sedative and chilling operation of marine humidity is counteracted by the stimulating influence of the saline particles which it contains. The different effects of a sea-fog and of a land-mist are well known." (p. 486.) The hygienic indications are chiefly of a protective and counteracting character. Artificial heat, combined with adequate ventilation, is an available and efficacious desiccating agent; and, in limestone districts, much good results from keeping pans of quick lime in various apartments, especially on the ground-floor. This is also a serviceable precaution against malarious and infectious diseases. "To diminish the dampness of clay and marshy soils in the immediate vicinity of dwellings, much may often be done by an efficient system of covered drainage; by the removal of superfluous trees and shrubs; and, where practicable, by covering the surfaces which are most constantly wet, with light sand, gravel, brick and mortar rubbish, or some similar light and porous material, which may form an artificial superstratum, and intercept the influence of the damp ground. The insalubrity of many low parts of the metropolis, especially in Pimlico and Westminster, has been wonderfully diminished by the latter expedient. A parallel protection against the damp of limestone walls of houses is obtained by the process of battening or covering the wall with

wood and canvas, or lath and plaster. The free use of concrete, or of slate or metallic plates in the foundations of houses, to prevent the rising in the walls of moisture by capillary attraction, should never be neglected, particularly in damp localities, where the lower parts of the building are likely to be inhabited." (pp. 486-7.)

The TEMPERATURE most conducive to comfort and health is about 63° Fahr., being thirty-five degrees below that of the interior of the body. It is rarely expedient to exceed this; and, when more warmth is required, it should be supplied by clothing or other means. The advantage of a degree of coolness in the air below that of the body arises not only from more oxygen being contained in a given bulk, but from the difference in temperature tending to maintain a current of respiration. Over-heated rooms, or those warmed with stoves of heated air, are peculiarly oppressive. We have, in the different temperature of the body and of the external air, an illustration of the adaptation of man to the circumstances in which he is placed. The animal body being naturally much warmer than the surrounding air, operates as a ventilator for itself, by the same consummate adaptation of pneumatic laws as that which supplies a flame or fire with a continued current of fresh air; and as we see a fire burn brighter and clearer in frosty weather, so an animal breathes a purer denser air, which if not injurious by its cold, is refreshing and invigorating to the body. Not only healthy and robust persons, but also some who are asthmatic or otherwise weak in respiratory power, acquire increased strength and energy in clear cold weather; and even those who, from weakness of circulation, cannot resist continued cold, and usually require a mild atmosphere, are generally refreshed and benefited by breathing cold air for short periods when exercise and warm clothing protect them against its sedative and chilling effects". (pp. 487-8.) Artificial heat is chiefly required in infants and in very aged persons; also in pulmonary invalids, who suffer from even brief impressions of cold, and should not, therefore, venture into the open air in cold weather without the protection of a respirator.

The ventilation of apartments is greatly promoted in winter by the difference of temperature between the air heated by respiration or by a fire, and the surrounding atmosphere; but in summer, where the temperatures are more equal, it is necessary to provide means to assist in maintaining a current of air, by opening windows and doors, and in cooling it by evaporation from a moist surface, or by sprinkling with cold water. To obviate the inconveniences commonly experienced in the ventilation of rooms in cold weather, Dr. Williams gives a decided preference to the means recommended by Dr. Arnott. The apertures formed in the room may, by means of a simple self-adjusting valve, be made to prevent too strong a current, or one in a wrong direction. "For perfect ventilation, two apertures (or sets of them) are requisite; one for the supply of fresh air, another for the exit of that which is foul. These should be placed at opposite sides of the room, and it is generally advised that the outlet should be placed near the ceiling, which is certainly the best position; and it may be made into the chimney where a fire is used (an efficient valve preventing the influx of smoke), or through the ceiling or roof, or in a top window pane, where there is no chimney. For the purpose of affording the freest influx of air, an aperture near or in the floor would be the most suitable position; but it is objectionable on account of the chill which it communicates to the feet and lower parts of the body. Commonly, therefore, the inlet for fresh air may be made in the upper pane of a window or panel of a door, most remote from the outletting aperture; and to prevent draughts, and to promote the diffusion of the air through the room, the opening should be covered with wire-gauze or finely perforated zinc plate; in addition to which, if necessary, an oblique screen of wood or curtain may be placed before it to direct the current to the walls and ceiling. By these means the fresh air, which is heavier, because cooler,

than the air of the room, gradually falls, and is dispersed, displacing the warmer foul air; and reaches the middle of the room, cool and refreshing for the heads and breaths of the inmates, yet causing no draughts on the lower extremities. In very cold weather, it is certainly advantageous to have the supply of external air moderately warmed before it enters the room; and the best method of effecting this, is by means of a well-regulated warm air stove, or an Arnott stove, with a current of fresh air directed on it, placed in the hall or at the bottom of the staircase. This inlet of a gently warmed air is useful, not only by taking the excessive chill from the outer air, but also by affording such an influx into the house as supersedes those irregular draughts, which, for want of other supply, force their way through every chink, hole, and cranny in the floors or walls, and which, besides a chill, often bring with them dust and bad effluvia acquired in their passage from without. The extreme dryness of the air thus warmed may be removed by shallow earthen pans containing water, placed on the stove." (pp. 489-90.)

In large public buildings, where many persons are congregated, or where other causes of contamination or impurity operate, a greater ventilating force is required: and for this Dr. Arnott has devised a kind of pump, moved by steam, and propelling air in a precisely measured quantity and regulated temperature. A machine of this kind has been constructed in the Hospital for Consumption at Brompton. It "introduces into the building about 2,000 cubic feet of air per minute; which, passing over 600 square feet of surface heated by steam, supplies an abundant amount of fresh air, moderately warmed. The foul air escapes through valvular apertures in the chimneys of each room." (p. 491.)

In the conclusion of his remarks on air, Dr. Williams adverts to the necessity of preserving it from contaminating effluvia. Cleanliness, adequate drainage, and an abundant supply of water, are essential to the wholesomeness of a habitation. Lime and chlorine gas should be used as auxiliary means. For further information on the subject of sewerage, Dr. Williams refers the reader to the Report of the Sanitary Commissioners.

Bodily Exercise. "Moderate and sustained exercise in the open air, provided the fatigue or exhaustion arising therefrom be removed by adequate rest and sustenance, excites and invigorates the functions of the body, and exerts a salutary influence on the structures. "The muscles especially, including the heart, manifest an increase of strength and firmness; the blood-vessels are improved in tone, by which they distribute and equalize the flow of blood through them, and prevent partial congestions and obstructions; and the blood, actively carried through the organs and textures, undergoes complete series of changes from nutrition, purification, and arterialization, by which its integrity is maintained, and it is adapted in its turn to sustain the several functions of the body. The appetite, the digestive powers, the intestinal action, the warmth of the surface and extremities, the spirits and temper, are generally all improved by the habit of regular exercise; and what can we say more to recommend any hygienic agent" ? (p. 493.) Dr. Williams next indicates a few cautions and directions as to the manner in which exercise should be adapted, in kind, time, and degree, to the strength, habits, occupation, age, sex, and other circumstances of the individual. In childhood, youth, and early maturity, active exercise, of short duration, and followed by repose, is suitable and salutary; while in adult age, prolonged exertion is better borne than exercise requiring great agility of movement. It does not, however, follow that the exercise of adult persons should be monotonous or slow. Persons much engaged in sedentary occupations should employ the hour or two they can spare for out-of-door exercise, in brisk walking in the country, alternated with an inspiriting ride, or with active gardening, or the like pursuit. More violent exertion, as dancing, cricket, rowing, or hunting, is, on the other hand, likely to be injurious to such persons; they encounter a perpetual risk of breaking down under the unusual

strain to which they subject their frame, and they gain none of that gradually renovating and invigorating influence which is produced by more moderate exercise regularly practised, although varied from day to day. In old age more caution is requisite; and the more so if a man have previously lived a sedentary life, and become stiff and prematurely old. A greater amount of exercise may be permitted to those who, "by a temperate and judicious mode of living, with habits of activity proportioned to the strength and age, have economized their vigour, and given fair play to their constitutional powers. These may be said to enjoy a green old age, in which a capacity for moderate exercise continues to be not less a source of recreation and comfort, than a means of sustaining health; but even these fine and in all respects venerable specimens of ameliorated humanity sometimes need professional warnings, against presuming too much on their well-husbanded strength. They are often carried off by acute attacks, which have been brought on by their stepping out of their sphere of safety, which, although wider than usual at their age, has nevertheless limits, which the steady hand of time is daily narrowing, but in so gradual and imperceptible a manner as to escape the attention of their own mental powers, now also on the wane. Hence one act of imprudence may be followed by fatal results; and that may be deemed to be imprudent which in any material degree exceeds the bounds of the accustomed habits". (p. 495.) Some instructive remarks follow, on the most salutary times for exercise; they are commonly those in which the bodily powers are not too much depressed, nor oppressed by the process of digestion. The time must vary according to the strength, occupations, or other circumstances. The section concludes with some remarks on the various effects of the different kinds of exercise.

Mental Occupation, like bodily exercise, should be moderate and equable, with some variety of excitement and relaxation; and must vary, in kind and amount, according to the different circumstances of age, sex, temperament, capacity, and habits of the subjects. This subject is an extensive one; yet the concise, practical remarks made by Dr. Williams are replete with instruction. He strongly objects to any attempts to concentrate the attention of children too long on any one thing, whether amusement or intellectual instruction; such attempts bring on exhaustion, fretfulness, bodily suffering, and, not unfrequently, disease; and too early or prolonged attempts to educate the mind, "anticipate the period at which the power of concentration or sustained attention is acquired, which it can be safely only by time and practice". In ripening youth, a leading rule to be observed is, to educate all the powers of the mind equally, exercising the weaker powers, and judiciously restraining those which unduly predominate. "Herein education includes not the mere communication of knowledge, but the discipline of the heart and mind; the subjugation of evil and useless inclinations and propensities, and the direction of the attention or activity of the intellect to objects that are profitable and improving. The influences by the aid of which this discipline may be exercised are manifold, and must in some degree vary with the age and with the character of the individual. In childhood, respect and love towards parents or others exercising authority; in youth, the same feelings confirmed and cultivated by the convictions of the understanding now giving increased spontaneity of thought to the individual; and, in all ages, the constraining and elevating influence of religion, in supplying the highest motives and rules for the conduct of thinking and responsible beings; these are the great leading instruments through which mental discipline is safely and effectually applied. But other and less dignified motives are often equally powerful, such as vanity, pride, ambition, rivalry, and the like; and although they prove the failing of the human mind from a standard of perfection, and, unless controlled, may become exaggerated into vice, yet, under restraint, they may be usefully enlisted on the side of mental improvement." (p. 499.) In adult age, the discipline and culture of the mind (which are

objects of education are still to be carried on with activity. Many difficulties beset all—especially beginners—in their attempts to control their more turbulent moral and mental dispositions, to cultivate the more gentle and calming feelings, and to apply their intellectual powers to worthy objects. But the advantages are so obvious, that the efforts should be proportioned to the difficulties: and with the full and rational exercise of human means, but with humble and faithful dependence on more than human guidance and strength, these efforts will never prove unsuccessful". The injurious effects of undue or prolonged occupation of the mind are thus pointed out:—"It abstracts the supply of blood and of vital energies from the bodily functions: these suffer and fall into weakness and disorder, whilst the nervous system, the material organ of the mind, is ultimately exhausted by the continued excitement, and refuses to perform one of its manifold functions; hence stupor, paralysis, or organic weakness of some kind may ensue; or others may retain a morbid erethism or irritation in the midst of general weakness; and delirium, spectral illusions, sleeplessness, tremors, spasmodic or painful affections may be the consequence". (p. 500.) Mental idleness not only weakens the intellect, but tends to degrade the body and its proper functions, by inducing habits of indolence and self-indulgence. Moderate and well-timed bodily exercise, and pleasing mental impressions, are advantageous in giving to the faculties that renascent energy which is well expressed by the term *recreation*. Variations in the kind of mental occupation, as by music, drawing, amusing games, light reading, or alterations of intellectual tastes, are often more effectual than absolute rest in refreshing the mind. Analogous rules may be applied to the moral emotions, so far as they are under the direction of the individual; and a natural tendency to an alternation of high and low spirits is observed in some persons.

Sleep is next considered with regard to its effects and nature, its symptoms, the circumstances which promote it, the evil consequences of the want of it, means of inducing it, and amount of sleep proper, according to age, sex, strength, etc. Dr. Williams gives the following directions: "The loss of rest is so seriously detrimental to health, that to prevent it by hygienic means is of great importance; and besides avoiding, so far as possible, the several causes of wakefulness just specified, bad sleepers should take heed to attend to the following directions for their regimen, rather than resort too hastily to hypnotic drugs, which, although sometimes useful and necessary as temporary expedients, lose their effect by habitual use, and produce other evil consequences which render their continuance improper. Bad sleepers should make a practice of early rising: it may cost them some trial of strength at first; but if they would improve their sleep, they should seek it at the natural time, and not late in the morning, when the excitements of the day begin. Their hours of meals and exercise should also be early and most regular, both in order to promote that state of health most conducive to ease and freedom from suffering, and also to secure the accomplishment of the processes of digestion and consequent excretion or eructation before night, which is the proper period for repose. Exercise should be used as freely in the open air as the strength will permit, without causing lasting fatigue; and if the strength do not bear walking or riding, driving or sitting out in the open air several hours in the day is an efficient means of promoting sleep, by gradually and gently fatiguing the senses by the operation of light, air, and sound, whilst the organic energies are refreshed and invigorated by their salutary influence. As the hour of retirement for rest approaches, every description of exciting agency should be avoided. The latest meal should be taken at least an hour before bed-time, and tea, coffee, and all vegetable matters apt to generate gas, should be excluded from it. Weak persons, and others under the influence of fatigue, may often advantageously take a little wine or alcoholic mixture at this meal; its operation, which counteracts the exhaustion and nervous excitement induced by weakness,

being composing and hypnotic. All active exertion of body or mind should be carefully avoided at this time. Subjects of conversation or reading should be commonplace or tranquillizing, neither requiring much attention, nor exciting to the feelings or imagination. The very preparation of undressing should be simplified as much as possible, and all superfluous items or general washing, etc. should be postponed until the following morning. Much might be said about the construction of the bed and its appendages, and the posture best suited for tranquil repose; but this is not the place for such details, which may be comprised in the general direction that all is to be made as comfortable as possible, without relaxing by excessive softness or abundance of covering." (pp. 504-505.) He does not seem to have much faith in the efficacy of various expedients for inducing sleep by repeating lines of poetry, counting numbers, etc. The best of these methods appears to be that of attempting to imitate the breathing of a person during sleep; but it frequently happens with this, as with all similar attempts to procure sleep, that the continuance of the effort breaks the spell by exciting the attention. With regard to the amount of sleep required at different ages, Dr. Williams observes: "Infants pass the greater part of the day as well as the night in sleep; and children, up to the age of six years, generally require at least twelve hours of repose, besides an hour or more in the middle of the day. At about this age, the sleep at noon may be discontinued, but the night sleep can hardly be abridged with advantage, until about the tenth year, and then only to a moderate extent, until the period of puberty, after which it is generally proper gradually to reduce the period of rest to nine or ten hours; and no further diminution is expedient until the cessation of growth, when another hour or two may be taken from it. The average amount of daily sleep beneficial in adult and middle ages, may be stated at eight hours. In more advanced life this extent of sleep is not less serviceable where it can be procured; but at this period the capacity for sleep usually diminishes, and wakefulness or disturbed sleep is a common complaint of old age. Attention to the precautions before recommended will, however, often restore it; and even if they do not sleep, aged persons require an increased period of time in bed, for the sake of warmth and rest, which their reduced calorific and muscular powers render more necessary." (p. 506.)

Females require more sleep than males, especially during pregnancy and lactation, to assist the supplementary nutritive processes. Persons convalescent from acute diseases, or otherwise weakened, require more sleep, which may even be procured by artificial means. The injurious effects of too much sleep are—a slackening of the circulation, a diminution of excretion and muscular nutrition, and the production of general plethora, or partial congestions, or of fat in those predisposed to it. The muscular and sensorial functions are weakened, while the medullary function acquires an undue ascendancy; hence arise spasmodic disorders, hysteria, or even epilepsy. The period of sleep should always be made to correspond, as nearly as possible, to the night; hence it is advisable that even adults should retire to rest, in summer especially, as many hours before midnight as can be spared after night closes, that they may be able to rise at or as soon after sunrise as they have had their proper complement of sleep. The usages of society and business of life often interfere with early retiring to rest; yet "the compromise of retiring one hour before midnight should be enjoined for the sake of health, and accompanied by an exhortation to early rising, enforced by a description of the refreshing and invigorating influences of the morning air, with its exhilarating concomitants of light and sounds."

The absolute necessity of a due performance of the process of EXCRETION is obvious from the fact, that its failure often leads to disease. As it depends on the activity of the processes of circulation, respiration, muscular contraction, and sensation, many of the hygienic measures which contribute to sustain these various processes are likewise efficient in promoting that of excretion.

"Thus, a proper regulation of *food*, solid and liquid, and a regular use of *exercise*, are important means of procuring all the excretions; and the functions of the skin and kidneys, and, in a less degree, those of the liver and intestines, also, are influenced by *clothing*, *temperature*, *air* and *sleep*."

The regular action of the *intestines* is promoted by no circumstance more than by the punctual habit of devoting a fixed and sufficient time to the evacuation. In habitually costive persons Dr. Williams prefers pressure or friction downwards, in the direction of the sigmoid flexure, to the use of enemata. Other means are serviceable, such as "the use of brown or rye bread, instead of white; taking at night oatmeal porridge, ervalenta or lentil, white mustard seed, stewed prunes, tamarinds, baked apples, and the like; all of which act by adding either a mechanical or a chemical irritant to the faculent mass, and may prove objectionable by irritating too much, and otherwise disordering the alimentary canal. The same objection applies to the addition of toasted bacon to breakfast, and that of a quantity of fruit to dinner. A more harmless, and sometimes more efficacious expedient, is that of drinking a large draught of cold spring water at first rising, which is useful for other purposes likewise. With some persons, malt liquors promote the action of the bowels. A walk before breakfast for the more robust, or a walk or ride immediately after that meal for others, often contributes to the same end; and in some instances such exertions as particularly bring into action the abdominal and other muscles of the trunk, such as digging, or other occupations in gardening, prove more effectual." (pp. 509-10.)

The habitual use of gentle aperient medicines should be avoided if possible; but if it be unavoidable, a daily pill is the most preferable means. Aloes and rhubarb are the best remedies, as they combine somewhat of a tonic with their aperient action. "Aloes," says Dr. Williams, "is the most efficacious aperient, and, if properly managed, does not lose its effects, even after many years of daily use. I know of an instance in which it was continued for fifty-seven years with unquestionably beneficial results; and the individual, in spite of very sedentary habits, retained uncommon vigour of body and mind until within a year of his death, which occurred at the age of eighty-seven. By far the best mode of administering aloes as an habitual aperient, is in combination with a little mastich, and made into a mass with alcohol, which renders the pill less soluble in the stomach, and therefore more capable of acting on the lower part of the canal. The combination which I commonly use, consists of three parts of socotrine aloes, with one of mastich powder, made into a mass with alcohol; two or three grains of this are to be taken at dinner or bed time daily. This pill has no tendency to excite hæmorrhoids, provided an occasional dose of blue pill be taken to promote a sufficient action of the liver. In several instances I have found it operate more comfortably on joining with it a few grains of inspissated ox-gall. In weakly persons, a grain of sulphate of iron or quinine may be added with advantage." (pp. 510-11.)

The free excretion of *urine* is promoted by draughts of water, with moderate exercise, short of causing free perspiration. Gardening and trotting on horseback augment the secretion of the kidneys, and may be recommended to those troubled with lithuria. In gouty and rheumatic subjects, such exercise appears to promote the elimination of solid matter, as well as of water. Diuretic beverages excite for the time, but are liable to leave the secreting power exhausted afterwards; as temporary means, however, they are useful. The regular evacuation of the bladder depends much on the sensations excited in various degrees in different individuals; and when circumstances interfere with obeying the natural impulse, its urgency may be diminished by limiting the amount of fluids taken, and promoting the cutaneous excretion by warm clothing and external warmth.

The uses of the *respiratory* secretion are recognized "in evacuating from the superficial vessels superfluous water, acid, and oily matter, under the dis-

tending or exciting influence of prolonged heat or exertion; in tending by its evaporation to cool the surface thus heated, and by its relaxing effect on the tissues to remove the irritation of distension or obstruction; and by the same softening operation to render the skin more pervious to the chemical action of the air on the blood, and to the vital influences reciprocated between the blood and the tissues." (p. 512.) In addition to these, the discovery of Landerer that urea is eliminated by the skin, adds not a little to the importance of this excretion. Besides the hygienic means formerly mentioned as promoting the perspiratory function, Dr. Williams notices bathing, washing, and friction. Warm bathing is most beneficial when used occasionally; or the whole surface may be daily washed by tepid sponging or shower-bath, followed by friction: these are highly salutary means of keeping the skin in an active and free condition, well suited to persons of languid circulation. "But, in the majority of healthy subjects, this object is better obtained by cold washing, and in the robust, even by cold bathing, in shower or plunge, which indirectly excites the functions of the skin by constricting its vessels, and thus throwing the blood on internal organs; and, by impression on the incident nerves, causes the excitement of reaction, which soon restores the superficial circulation in redoubled force, with its concomitant redness and glow. This reaction is much promoted by vigorous friction of the whole surface with coarse towels or horse-hair gloves, and this operates not only by stimulating the cutaneous vessels and glands, but also by the muscular exertion exciting the heart to stronger and more frequent contractions; for the same reason, other exercise, as in a brisk walk, is often useful. If, after cold bathing, the reaction is incomplete, and the skin remains pallid, chilly, and contracted, it may be inferred that the cold has been too long applied, and has permanently impaired the functions of the skin, and left the internal organs more or less congested. Or if, after complete reaction, an unpleasant fatigue, languor, chilliness, headache, or other uncomfortable sensation remain, it is a proof that the cold and subsequent reaction have been too depressing or exhausting; in either of these cases, tepid bathing or washing is to be preferred." (p. 513.) The vapour-bath, with shampooing and various aromatic and stimulant applications, though very useful in some cases of disease, is too exciting and exhausting to be recommended as a general means of preserving health.

An Appendix follows, containing the results of some researches by Dr. Garrod and Mr. Palmer on the Pathology of Gout and Rheumatism; a summary of Dr. Garrod's observations on The Causes and Treatment of Scurvy; and some observations on the Use of Chloroform.

The lengthened analysis we have given of Dr. Williams' *Principles of Medicine* will, we trust, clearly prove to our readers his perfect competency for the task he has undertaken—that of imparting to the student, as well as to the more experienced practitioner, a knowledge of those general principles of pathology, on which alone a correct practice can be founded. The absolute necessity of such a work must be evident to all, who pretend to more than mere empiricism; and we cannot more forcibly illustrate this point, than by quoting some portions of the remarks contained in his Introductory Lecture, "On the Need of Principles in Medicine," which he has appended to the present edition of his Principles.

"As anatomy and physiology, with chemistry, are the studies preparatory to medicine, one might expect that they should be made fundamental to that of medicine; that, starting from the knowledge of the healthy body, as taught by them, the transition should be easy and intelligible to disease—first, in its lowest degrees and simplest form; then to the more compound, pronounced, and more removed from, but still comparable with, the healthy standard. Instead of this, lecturers and writers plunge at once into the mazy thickets of inflammation and fever—subjects so complicated,

so changed from anything taught by previous study, that anatomy and physiology afford little help: and no wonder that the student (like many observers and reasoners on the same topics) becomes confused and bewildered in the complexity of the subject; or, if he do make out anything, it is something isolated, abstract, about fever or inflammation itself, without its natural relations to health and to other diseases.

"This plan of proceeding may be compared to a person beginning the study of mechanics with the steam-engine; or to the student of chemistry commencing with organic matter.

"The general result is, that where any distinct notion of disease is acquired, it is one not at all founded on previous physiological knowledge, but it is a new idea of disease as an absolute, separate thing—not a mere condition consisting of altered function and structure, but a being, the character and history of which are to be detailed like that of a plant or an animal. And when special diseases are treated of, the same individualizing process is pursued through all the jargon of the schools. Each has its nosology, classification, and definition; its predisposing, exciting, and proximate causes; its theory, *ratio symptomatum*; its diagnosis, prognosis, indications of cure, fulfilment of these, *juvantia et lædentia*, and prophylaxis!

"With all this formidable array to each disease, the practice of physic was an arduous study in the days of Cullen. What must it be now, when the diseases of Cullen's nosology have been almost doubled, and the facts relating to them have been more than doubled?

"But let us follow the student, well crammed with his nosological list, their definitions, &c., to the bedside. Let us see how his knowledge, so meritoriously obtained, will serve him in the hour of need. In a few cases fully developed and well marked acute diseases, such as pleurisy, scarlet-fever, or rheumatism, he may get on pretty well; but in the commoner description of cases, acute or chronic, in their early stages, in their endless variations from peculiarities of constitution or from complicating causes, he finds himself continually puzzled: the phenomena do not correspond with any of his defined diseases; they frequently change their character in a way that he cannot account for; his prognosis is falsified; his diagnosis fails; and his treatment, although not always unsuccessful, does not answer according to his expectations; some patients recovering whom he expected to die, others dying, or not improving, whom he expected to recover.

"Disappointed in the failure of his nosological learning, the young practitioner more and more mistrusts it, and falls into a routine of empirical practice. Without troubling his head about the name or nature of diseases, he thinks solely of their treatment; and, begrudging the time that he spent with books and lectures, he decries every thing that is not practical.

"Still he is obliged to retain some notions of the theory of disease; but they are general notions, and not fettered by definitions. He still studies symptoms: he seeks in the pulse and heat of skin indications of fever and inflammation; he looks to the tongue and alvine evacuations for proofs of disorder of the digestive organs; he judges by the complexion and muscular strength the state of the constitution. Instead of troublesome scholastic definitions, he uses convenient, general terms, which may be taken in a pretty vague sense—such as irritation, congestion, constitutional weakness, cachexia, disordered digestive organs, scrofula, scorbutic habit, and the like; and his remedial measures are designated in the same convenient general terms—such as soothing, cooling, supporting, stimulating, alterative, purifying, etc. In short, he has, in practice, learned himself, in a loose way, at the expense of previous studies, and sometimes, it is to be feared, at the expense of some bad practice, what he ought to have been properly taught as the foundation of his studies—*general pathology*. Thus we are led to the presumption, that general pathology is the proper basis for practical medicine; and I venture to affirm, that a chief reason why the practice of medicine has been commonly

so distateful, and so difficult in its study, and so unsatisfactory when tested at the bed-side, is, because its foundation, *general pathology*, has not been efficiently taught." (pp. 521-23.)

So long as anatomy, physiology, and the allied sciences, had not attained a sufficient degree of development to be rationally applied to the investigation of disease, the state of medical practice which Dr. Williams has, with equal force and truth, described, was excusable. Our knowledge of pathology is indeed imperfect;—much remains to be done, and many of the opinions which have been advanced will require modification. But no excuse remains for him, who, rather than be guided by the light held before him, would rather wander in darkness in the forest of empiricism, and who would be so far forgetful of the duty he owes to his fellow-men, as to retard the improvement of that profession, whose end is the good of mankind. Experience, without pathology, may, after length of years, make a passably successful practitioner; but even then, his failures, when divested of the screen spread over them by age and the name of experience, only tend to show the insecurity of the foundation (if indeed there be any) of his practice.

"But the benefit of such experience is gained at the commencement by the student of pathology. He has learnt to trace symptoms to their causes. Having been taught, by anatomy, the peculiarities of the circulation in the head—and by physiology, confirmed by clinical observation, that this circulation may be similarly impeded by opposite causes, inanition as well as fulness, he is prepared to find out, through other symptoms, which is the cause of the headache in the case before him; and he adapts his remedies accordingly.

"In fact, a true pathology, or sound principles of medicine, is the embodiment of the results of experience in disease, with a knowledge of structure and function in health. It is the only connecting link between the preparatory sciences and practical medicine. *Without* it, these are *disjecta membra; with* it, they form a connected body of science—young yet, it is true, and falling short of the objects of the art, but already available for much, and needing only the growth and continued support of its chief members, especially anatomy, physiology, and clinical observation, to become the perfect and efficient director of practical medicine.

"The great proof of the practical utility of general pathology is, the aid which it gives in the study of clinical medicine, and the light which clinical medicine continually throws on it. The states which the practitioner has to treat are often too indefinite or too mixed to correspond with any of the definitions of special disease. They frequently consist of functional disorder, varying with time and circumstance, or changing its place, so as to present no fixed characters. But, compared by the pathologist with the standard of health, and analyzed from their complexity, their nature becomes intelligible, and their proper treatment obvious, so far as means are possessed to counteract or control that which is wrong." (pp. 523-24.) Dr. Williams illustrates this position by examples: and we quote his remarks on *hysteria*. "What confusion in diagnosis, as well as in practice, has arisen from comprehending, under the specific name *hysteria*, the most opposite and most varying conditions, merely because they are consorted with some nervous phenomena; so that this word becomes almost synonymous with *female diseases*. But, pathologically considered, the confusion in diagnosis, and, in some measure, the perplexity in regard to treatment, cease. In one group of such cases, the pathologist finds really such signs of disordered *uterine* function as would justify the name; other symptoms, however varied, taking their origin from this disorder; and he thus discovers the necessity of directing the treatment to this cause. In another group, again, he finds the uterine function impaired; but this only in common with other functions: and all this in consequence of a *want of blood*

throughout the body, which want is denoted by the waxy complexion, the pallid lips and gums, the loose yet easily quickened pulse, the panting breath, and the feeble limbs. Here, the restoration of the blood is the obvious indication; and, in proportion as this is effected, the symptoms of nervousness, debility, and loss of function, disappear. In a third group of cases, called hysterical, the pathologist discovers the opposite condition, that of *sanguineous plethora*, which, independently of any disorder of the uterus, causes trouble, sometimes in one part, sometimes in another, but especially in the nervous system, which, in most females, is peculiarly liable to disorder. Here, too, he is led to the most appropriate treatment." (pp. 524-25.)

We must conclude, by again expressing our high sense of the immense benefit which Dr. Williams has conferred on medicine by the publication of this work. There are points on which the opinions of Dr. Williams may require modification in subsequent editions; yet we are certain that, in the present state of our knowledge, his *Principles of Medicine* could not possibly be surpassed. While we regret the loss which many of the rising generation of practitioners have sustained, by his resignation of the chair at University College, it is comforting to feel, that his writings must long continue to exert a powerful influence on the practice of that profession, for the improvement of which he has so assiduously and successfully laboured, and in which he holds so distinguished a position.

On the Logical Applications of Physiology to Pathology: a Lecture, Introductory to the Course on the Principles and Practice of Medicine. Delivered at University College; by Professor Walshe, M.D. 1849.

Dr. Walshe is an able man: but we think he might have exercised his abilities more usefully, than in the composition of the Introductory Discourse before us. The following sentence, which occurs near the commencement, in some degree prepared us for the sequel. "I need scarcely remind you, that in our science, First Principles are utterly unattainable; for the counterpart of the Gravitation of the Natural Philosopher, the Pathologist may sigh in vain." This, we suppose, is intended as a declaration of war against the doctrines taught by his predecessor; and of the truth of which, we have repeatedly declared our conviction.

Dr. Walshe asserts the independence of Pathology on all other sciences, and devotes most of his Lecture to the refutation of an apophthegm, said by him to have become a household phrase in medical circles—that "all Pathology is based on Physiology." We have no idea to whom Dr. Walshe refers as having enunciated such an absurd dogma as this appears to be; but indeed the phrase evidently bears a double meaning. If it be asserted by any, that Pathology is founded on Physiology *alone*, then the doctrine assumes a form in which it will be repudiated by every Physiologist and scientific physician, especially by those who have laboured hard to establish First Principles in Medicine. But if it be merely meant, that Physiology is *one* of the sciences on which Pathology is founded, then it is superfluous in Dr. Walshe to "refuse to recognize as the *true formative material* of the science of Pathology, (that is, the sum of classified laws of diseased actions,) inferences deducible, prior to experience, from current notions, (whether possible, probable, likely, very likely, or certain,) held concerning the natural texture and healthy actions of the frame"; to deny that Physiology (physical, chemical, or vital) is the basis of Pathology, in the sense that acquaintance with the one secures by involution acquaintance with the other"; and to deny that "Physiology is the basis of Pathology, in the sense that,—given the recognized healthy life of an organ, the consequences of the derangement of that life can, by any forms of reasoning, inductive, deductive, analogical, or other, be positively predicated prior to actual experience of their character and habitudes."

What is the Physiology of which Dr. Walshe has taken such pains to show

the worthlessness? It seems to be merely the transcendental or speculative department of the science, which he sets up as Physiology itself. We quite agree with him, that wild speculations, even though they be physiological, are not safe material from which to construct pathological generalizations. We acknowledge the failure of such physiology in announcing the conditions and effects of various infractions of hygienic rules, because observation was not called to its aid and direction: we admit the purely hypothetical character of such speculations as the hyper-oxidation theory of Liebig in phthisis; but we assert, that no other legitimate inference can be drawn from such instances than that *speculative* Physiology is an unsafe guide. But Physiology is an inductive science; it is pre-eminently a science founded on the observation and generalization of facts. From examination of the structure and arrangement of the several parts of the body, from experiments on animals, and from clinical observation, it derives its most valuable conclusions. Dr. Walshe objects, that Physiology often assumes to itself the merit of establishing pathological facts and doctrines; and maintains that experiments on animals are pathological researches. Pathological phenomena are, undoubtedly, produced by such experiments, as well as by disease: but from these phenomena we derive our knowledge of the healthy function (the Physiology) of the affected organ. In this consists the value of the physiological experiments of John Reid, to whom both Physiology and Pathology are under deep obligations. And conversely, from a knowledge of the functions of the body in health, we can predict the conditions of Pathology to an extent much greater than Dr. Walshe supposes, when he says that "the what, the when, the how, the how long, the what for, and the where to, are all matters belonging to the province of experience alone." For instance, we can, from a knowledge of the structure and functions of the central organ of circulation, pretty correctly predict, what will be the pathological effect of lesion of any of its valves, how and why it occurs, and to what it will tend. Our knowledge of Physiology is as yet imperfect; but so far as its doctrines are established, they are invaluable guides in the discernment and treatment of disease. Physiologists themselves do not pretend to do more than contribute their portion of aid to the investigation of pathological phenomena. But as long as Physiology is imperfect on any point, Pathology must remain in a corresponding condition. Numbers of illustrations of this might be pointed out. The two sciences are intimately connected—it is impossible to disconnect them. To use the words of Dr. Carpenter, "the science of Pathology has so direct and immediate a dependence on that of Physiology, that the former cannot be pursued, with a fair prospect of success, without a knowledge both of the principles and of the chief phenomena of the latter." Physiology, then, supplies facts as valuable as clinical observation can produce, on which to found the science of medicine—we mean Pathology and Therapeutics, as they ought to be taught to students, and as they ought to be carried out in practice.

We do not uphold Physiology as *the* basis of Pathology; and we recognize the absolute necessity of clinical observations. The following extract from Dr. Williams's Introductory Lecture, to which we have referred at p. 1018, expresses ideas of the truth of which we have had the good fortune to become early convinced. "It is not a partial set of opinions, erected on *one* only of the many pediments of fact, on which the science of medicine should stand. Healthy anatomy, physiology, physics, chemistry, the study of clinical medicine, that of materia medica, morbid anatomy, neither of these *alone* can furnish a foundation for Pathology—that foundation must be formed by ALL—the facts which all supply, constitute the material of which it is built; and the general facts or laws of all must be brought to bear on the arrangement of these materials in the construction of a system of Pathology."

Time and space alike prevent our enlarging upon various topics which we *had* noted for remark. In conclusion, we would just add, that it is chiefly *because we appreciate* the value of much of what Dr. Walshe has done for

medicine, and because we know that, in virtue of these labours, his name must carry weight, that we have thought it our duty to record a protest against this manifesto, first promulgated orally, in an Introductory Lecture at University College, then in the columns of the *Medical Times*, and lastly, as a separate pamphlet. We think it is calculated to give narrow conceptions, and a wrong bias to youthful minds.

THE HARVEIAN ORATION DELIVERED BEFORE THE ROYAL COLLEGE OF PHYSICIANS. By JOHN CARR BADDELEY, M.D. Cantab. pp. 20. London: 1849.

It is ordained in the Will of Harvey, that the annual Oration founded by him should be composed in Latin. This, to many of the orators, is, perhaps, a fortunate circumstance; for tame ideas, rolled out in the measured periods of the ancient language, sound better, than if framed in the vernacular. Moreover, compliments bordering on the high-flown can be addressed to individuals present, without submitting their modesty to that trial, which could scarcely be avoided, were the same sentiments expressed in familiar Saxon.

Dr. Baddeley has, as in duty bound, passed in review the chief ornaments of the medical profession, and has without bigotry included in his catalogue of the great, Jenner, and other illustrious men whom the College neglected during life. Of all in his list, the learned orator speaks in glowing terms; and of none more touchingly, or more eloquently, than of the venerable physician who now occupies the President's chair. We can imagine that illustrious doctor when thus fervidly addressed:

"PARIS, ut salvus regnet, vivatque beatus;"

gently whispering in the same classic tongue,

"Non omnis moriar . . . . usque ego postera
Crescam laude recens."

To be serious, we hope that the time may yet arrive, when STERLING MERIT will be the honourable and only key able to unlock the jealous portals of the Royal College in Pall Mall. Were a kinder and juster policy now to be adopted, the past would be forgiven; and we should not have men, like Sir James Clark, in the highest places of the profession, positively refusing the Fellowship.

DISSERTATION UPON DISLOCATIONS AND FRACTURES OF THE CLAVICLE AND SHOULDER JOINT, being the Jacksonian Prize Essay for 1846. By THOMAS CALLAWAY, F.R.C.S., pp. 178. London: 1849.

This work is creditable to the author; and displays much care in its production.

The subjects treated of are Fractures and Dislocations of the Clavicle; Fractures of the Scapula; Dislocation of the Shoulder Joint; Fractures of the Head of the Humerus; and Injuries to the Longer Head of the Biceps.

Mr. CALLAWAY is of opinion, that the accident usually described as a partial dislocation of the humerus forwards, is the result either of dislocation or rupture of the longer head of the biceps. In such cases, he thinks, little can be done in the way of treatment. He considers that it is impossible to bring it back to its true position, and that much mischief might arise from attempts to do so; he states, that he would elevate the shoulder and direct the patient to flex and extend the forearm, at the same time rotating the Humerus, and then advise warm fomentations and perfect rest; and, at the end of a fortnight or three weeks, employ passive motion. There are few injuries more unsatisfactory than the one in question; and the above treatment is, perhaps, as good as any which can be devised. Mr. Callaway gives a well-drawn illustration of the appearance of an arm, in which rupture of the tendon has taken place.

GOUT: ITS HISTORY, ITS CAUSES, AND ITS CURE. By WILLIAM GAIRDNER, M.D. pp. 232. London: 1849.

DR. GAIRDNER has evidently thought much, and with some profit, upon the subject of his treatise. His opinions are entitled to respect, as they obviously proceed from an honest, earnest, and accomplished inquirer. As to their soundness, there must of necessity be more or less difference of opinion.

The author does not offer his book as a complete treatise on Gout: he confines himself to the purer type of the disease, and does not touch upon what, we must say, is a very important, if not an essential part of the subject, viz., what the author terms "the complication with rheumatism", but which we would prefer speaking of as the *relationship*, real or supposed, which exists between Gout and Rheumatism. "I do not think it necessary", says Dr. Gairdner, "even to allude to those opinions, chiefly prevalent in France, and founded on one or two remarkable symptoms, which would confound Gout and Rheumatism as one disease. By such reasoning, medicine might be made very simple in its doctrines, at the expense of great instability as a science, and much uncertainty as an art." This summary repudiation of the affinity between Gout and Rheumatism has saved the author a great deal of trouble, because he could not have made good the assertion, without entering upon discussions of considerable extent. The abrupt dismissal of the controversy is not, however, satisfactory to the practical reader, who must feel anxious, we think, to learn from Dr. Gairdner his simple method of differential diagnosis between the two diseases, and likewise to receive an explanation of the fact, that notwithstanding the coincidence and similarity in many of the symptoms, and in many of the remedies, there should nevertheless be only an accidental likeness, and no real relationship between, the two diseases. Far be it from us to maintain, that Gout and Rheumatism are identical; but we think it is most important in practice, to bear in mind that they are cognate affections.

Dr. Gairdner does not believe in the idea of a poison, or morbific matter, operating in a way peculiar to itself; and, so far as the phraseology is concerned, we have no objection to admit that, very probably, it is hardly accurate. The fact is this, however,—a something exists in certain individuals, which may either originate in their dietetic and other hygienic errors, or may be transmitted to them from their progenitors, which influences, in a mysterious,and as yet wholly unexplained manner, the bio-chemical changes essential to health. This influence, or as some call it, this morbid poison, may be counteracted, or its operations kept within certain limits, so that gouty symptoms may be kept in abeyance, or entirely prevented. This general statement is not a speculation, but an expression of undeniable and ascertained facts: and we think that it is only in this way that Gout can be truly considered as a poison disease. By a perversion of the healthful bio-chemical changes, there takes place within the blood an excessive production of poisonous matters, of which uric acid seems to be one of the most important: and it is clear, that if the eliminating organs be not sufficient to get rid of these morbid substances, toxæmic symptoms must arise. The phenomena known under the popular names of Gout and Rheumatism are known to be connected with an excess of uric acid in the blood; and, in considering the pathology and treatment of these diseases, it is most important to remember, that during the progress of, and in the convalescence from certain fevers, (when the eliminating organs seem to be too feeble to throw off from the blood the too rapidly formed uric acid and urea,) we have, very frequently, temporary rheumatic and arthritic affections. These considerations seem to point out the impropriety of disconnecting Gout and Rheumatism, either in theory or in practice, as both are essentially the result of an excessive formation of poison in the blood, and their imperfect elimination from it; and, in both, the indications *of treatment* are two-fold: viz. to prevent the formation of morbid matter by *constitutional treatment*, and to promote the removal of that already formed,

by such an administration of remedies, as will best promote elimination by the liver, kidneys, and other organs.

We have no great objection to the following paragraph, in which Dr. Gairdner sums up some of his ideas: "The real pathology of Gout appears then to me to be comprised under these heads,—an increased pressure of the blood, from its accumulation in the great veins, and an altered state of that fluid leading to the formation of uric acid instead of urea; these results being dependent on too copious an assimilation of nutriment, on defective respiration, and on more or less suppression of the healthy evacuations from the liver, the kidneys, and the skin." (pp. 145-6.)

For the various interesting remarks and arguments connected with the chemical part of the subject, we must refer to the work of Dr. Gairdner; simply observing, that his opinions are not in accordance with those generally adopted; but that, nevertheless, they are not undeserving of attention.

We quite agree with Dr. Gairdner in thinking that more can be done for the CURE OF GOUT than is generally supposed. It is also our opinion that the greater part of the suffering from Gout which prevails, especially in the southern division of the United Kingdom, would cease, were the community to adopt a more abstemious regimen, and, in particular, to avoid overloading the system with excess of nutriment, especially with superabundant animal food, and fermented drinks. In Scotland, among tradesmen and working people, Gout is unknown; whereas, among the same class in London and its suburbs, it is almost as commonly present as absent. Take any metropolitan district, and inquire into the health of persons not starving paupers, and it will be found that the proportion of those, who are more or less gouty, is quite extraordinary. Institute a similar search in Edinburgh, and, if you except tavern-keepers and gentlemen's butlers, you will hardly find a man who has Gout, excepting among the luxurious of the upper classes. Such facts being unquestionable, and on a great scale, point out pretty clearly that the most important part of the prophylaxis exists in dietetics. We are very far, however, from undervaluing the importance of certain medicines in the prevention, as well as in the cure, of the disease. It is not always to safe to make a rapid reformation in diet; and when our patient is in the transition state, between full feeding and frugal fare, we have great faith in the benefit which may be derived from the occasional use, for a considerable time, of small doses of such medicines as guiacum, aconite, colchicum, acetate of potash, blue pill, compound squill pill, and various antacids. The method, the doses, and the combinations in which these medicines are necessary, as well as the propriety of using them at all, must depend on the special circumstances and progress of each case. We cannot concur with those who object to colchicum. It is a dangerous drug to play with; but, when skilfully used, the advantages derived from it are both striking and permanent.

A few extracts from what is said regarding the TREATMENT will, we doubt not, be acceptable to our readers.

"PURGATIVES. While I would unhesitatingly and earnestly dissuade from the free use of drastic purgatives, I conceive it to be a great error to carry the dread of purging so far as was done by Sydenham. Laxatives are essential in Gout; even when patients lead a most abstemious life, it is necessary that the bowels should be occasionally relieved by medicine. The effect of the disease is to lock up the secretions, and suppress the evacuations. This must be counteracted by laxative medicines, among other means. The frequency with which they must be administered varies in different cases.

"Much care is necessary in the selection of remedies. For some years past, I have made little use of the neutral salts as aperients in Gout. The profuse watery evacuations to which they give rise are, I think, injurious. The warm and even the more powerful vegetable aperients, such as senna, rhubarb, aloes, jalap, and scammony, seem to me far better adapted to the constitution of the gouty. They may be given with great advantage in the

form of tincture, and also associated with the warm aromatics and tonic bitters. These are the aperients I have long used in my practice, and I find much reason to be satisfied with the result.

"It is impossible to establish any rule concerning the dose. Each case of Gout is a separate study. The dose must be proportioned to the patient's degree of susceptibility. Yet there are some hints which may prove useful. The atonic forms of Gout require much more gentle handling than the regular disease; and persons with accumulated fat about the viscera of the abdomen, ask for stronger means than the spare and paunchless will bear. As the disease gives way, gentler and gentler remedies are required. At this period, indeed, it will often be found that the smallest doses of laxative medicine cannot be borne, and drastic purgatives may produce the serious accidents I have described in the history of the disease. In fact, as the paroxysm wears off, secretion returns; and the excreted fluids having found their way to their accustomed and natural channels, aperients become less necessary." (pp. 192-94.)

"Tonics have, in all ages, been used in Gout, and are recommended by most physicians. Even Sydenham, who treats other remedies with contempt, admits them among his means of cure. He gives a long receipt for an elaborate and complex posset, which would be very ungrateful to modern stomachs, though he talks of it as regaling to the senses. The chief tonics used by the older physicians are the snakeroot, sage, fenugreek, centaury, gentian, &c.; the latter alone being preserved in modern practice. If used at the subsidence of the fit, and accompanied by exercise and suitable diet, I am convinced that tonics have not been too much extolled—hardly even duly appreciated; but it is not at the close of the fit alone that they are useful. In all those forms of lingering and atonic Gout which affect the distant parts of the body with irregular and flying pains, the stronger tonics will be found useful and potent assistants to the warmer vegetable purgatives. Quinine, in doses of two grains, twice or even three times in the day, accompanied by a mild laxative at night, will very often succeed in restoring comfort. Dr. Giannini, of Milan, under a very false theory, made use of a plan somewhat similar with great success. The virtues of the celebrated Portland powder are probably to be referred to the same cause. I never saw this remedy used but once, and then without any good effect. I am unable, therefore, to speak in its praise; but I have no doubt that any good it has ever done may be accomplished by much simpler means.

"Tonics are chiefly useful in the later periods of Gout. In the last painful stage, iron will often be found a most important resource, unless there be signs of a strong tendency of blood to the head: this, however, is seldom the case at the close of an attack of Gout. There is a form of the disease chiefly seen in old people, which is manifested by swollen articulations of the hands, with slight derangement of stomach, faltering in the action of the heart, and intermission of the pulse, for which iron seems to me the best, if not the only, remedy. The forms in which I have chiefly used it are the saccharine carbonate of the *Edinburgh Pharmacopœia* (a most useful preparation), the citrate, and the tartrate. I have an objection to giving prescriptions in practical works in medicine, because each case has its own idiosyncrasy, which must be taken into account, and no intelligent practitioner will adopt the formulæ of another; but I am tempted on this occasion to say that, in such cases as those to which I have referred, five or ten grains of the above preparations, in any aromatic water, taken twice in the day, and followed occasionally at night by eight or twelve grains of extract of rhubarb, with one drachm of phosphate of soda, half an ounce of compound decoction of aloes, and an ounce of pimenta water, will often be found to suit the case well." (pp. 196-98.)

Colchicum. "There is no doubt that colchicum is one of those drugs, whose claim to be considered specific is well established. Its effect in *freeing* the body from disease bears no adequate relation to its immediate

visible and tangible, or, as it has been called, its physiological effect on the system. This, indeed, appears to be denied by Dr. Christison, who declares that he has never seen the full benefit of colchicum conferred, till it had produced griping, purging, or some disturbance of the *primæ viæ*. So far as Gout is concerned, I am quite sure this is an error. Colchicum never more effectually relieves the patient, than when it acts silently and peacefully, without producing any evacuation whatever, or in any way disturbing the his comfort and ease.

"The *modus operandi* of this remedy is not wholly involved in mystery. Dr. Douglas Maclagan, Professor Chelius, and Dr. Lewins have demonstrated that it causes a more copious discharge of urea from the system; and I have found, in repeated investigations, that the increase of urea was attended by a great diminution of the urates in the urine. The idea, therefore, which I have expressed in another part of this work, receives confirmation here. Urea and uric acid are again found to be correlative and vicarious substances.

"This effect of colchicum on the secretion of urine would seem to confirm the opinion of Dr. Holland, that 'it owes its virtue in the disease to a specific influence on this secretion.' But this is hurrying too fast to a conclusion. The connexion of vitiated urinary secretion with Gout is indeed very manifest, and it might, even *à priori*, be expected that a remedy which puts an end to the paroxysm should very powerfully affect the symptom in question in common with all others. I fear we are hardly yet prepared to explain the action of colchicum. Longer observation is necessary to solve this difficult problem; but I quite agree with Dr. Holland in the expectation that, from this source, a strong light may be shed on the pathology of the disease. I cannot, however, understand why he should deem it so improbable that the operation of colchicum should be through the nervous system. When I consider how much Gout is influenced by the condition of the nervous system, and that the most notable effect of colchicum, whether acting as a remedy or as a poison, is that of a narcotic; and when I further consider the great rapidity of its action, it appears to me probable that the nervous system will be found to be the principal channel through which this medicine exercises its powers. I cannot myself conceive any medicine capable of removing, in so short a time, all evidence of so much bodily disease and suffering, save one that acts immediately on the nervous system. By what means, indeed, colchicum restores the secretion of urea, and accomplishes that mutation of principles which I have ascribed to the influence of respiration, is a mystery which I cannot thoroughly penetrate. Yet even this appears to me to receive its most satisfactory explanation through the nervous system. I believe I have made it certain that the heart is enfeebled in Gout, and that its action is irregular and spasmodic. All practitioners know the value of narcotics in quelling this desultory action. May not some part of the great effect of colchicum, and of veratrum album, aconite, and opium (all which remedies may often be made coadjutors to, and sometimes substitutes for colchicum) be ascribed to their power of regulating the action of the heart, so as to induce a better and more even distribution of blood in both the systemic and pulmonic capillaries? But whatever degree of credit may be given to these speculations, it is undoubted that no sufficient explanation can yet be given of the action of colchicum: in other words, it must be classed among specifics.

"The cases to which colchicum is most applicable are, without doubt, those of the regular disease, without injury of organs. If there be injury of tissue, so as to argue a destruction of function of any considerable portion of the kidney or liver, the relief to be obtained from colchicum will be problematical. The cases, too, of atonic Gout certainly receive less relief from this medicine, and some of them are so little influenced by it as by no means to compensate for the low and depressing feelings it often

creates. These effects may, however, be much obviated by combining it with warm aromatic tinctures and waters, and with the vegetable laxatives. The latter do not in the least destroy the specific action of colchicum, but, on the contrary, much promote it. I have often been obliged, in cases which received subsequent relief from colchicum, to renounce the use of the remedy till some defect in the general health, or some local disorder, had been attended to and relieved.

"But the most common reason of the failure of colchicum, is the unnecessarily large dose which is frequently administered. I have often seen quite a poisonous influence from doses carried to the length of producing sickness and diarrhœa. It is true, that this is not a cumulative poison, and that if the medicine be intermitted, the symptoms vanish quickly; but the effects of the narcotism induced often remain to such a degree, that the patient cannot return to the remedy without a reproduction of his painful symptoms, and its good effects are lost for a considerable time.

"I have said, that the incautious use of colchicum might aggravate the natural tendencies of the disease; and I feel well assured that many persons have suffered much from, and even paid the heavy forfeit of their lives to, the extreme readiness with which they fly to the relief which this remedy affords. Physicians may indeed dispute about the proximate cause and peccant matter of the disease, but surely no one will doubt for a moment that it has a cause; and it will be granted by most men, that the various painful symptoms by which the presence of the disease is manifested, constitute an effort by which Nature seeks to relieve herself from a malignant influence, and recover the equilibrium of health. In this sense the paradoxical expression of Mead, that 'the gout is the only cure of the gout,' contains a great truth. If this be the case, it must surely be apparent to the most careless reasoner, that it can neither be good philosophy nor good practice to use a means which should simply put a stop to a salutary process. Nature seeks a relief *quâ detur porta*, and the physician must not arrive only to forbid it, and to lock up the mischief.

"The first bad effect seen from too early an administration of colchicum, is that of a total failure of the remedy. The local disease is indeed relieved, but the distress of the patient is in no degree mitigated. His constitutional symptoms remain the same, and in no great length of time an explosion takes place in some other part, in all probability nearer the centre of the system. A metastasis has been effected; but the serious consequence is a prolonged disease; and a prolonged disease is often a great injury to the constitution.

"If, on the contrary, the disease be permitted to expend its first violence, colchicum may be both safely and effectually used. When the fever has abated, the œdematous swelling of the part been established, and the bowels well relieved, colchicum may be used with good effect and perfect safety. A long experience of the medicine now enables me, with great confidence, to recommend to younger practitioners to abate much the amount of the dose they use. I have seen doses of one drachm of the wine or tincture given twice and three times in the day, with no effect on the disease, but with sad disturbance of the patient's constitution; and I have seen the same cases led back gently and quickly to health with doses varying from ten to fifteen minims, after a little time had elapsed, and the fire of the disease was in some degree extinguished.

"If there be sufficient vigour of constitution to permit the practice of a small bleeding, according to the method I have already mentioned, colchicum may be used much sooner, and its administration will generally be attended with happier effects; but I have mostly found it prudent, as well as advantageous, to pause for a couple of days after bleeding before using colchicum." (pp. 201-7.)

It would be easy to multiply interesting extracts from Dr. Gairdner's work, every part of which, indeed, will well repay perusal.

PRACTICAL TREATISE ON INFLAMMATION OF THE UTERUS AND ITS APPENDAGES; and on Ulceration and Induration of the Neck of the Uterus. By JAMES HENRY BENNET, M.D., Physician to the Western General Dispensary; formerly House-Physician (by *Concours*) to the Hospitals St. Louis, Nôtre Dame de la Pitié, and La Salpêtrière, Paris. Second Edition, pp. 527. London: 1849.

When DR. HENRY BENNET published the first edition of his work, very inadequate attention had been paid, in this country, to Inflammation of the Uterus, and to ulceration and induration of its neck. In France, however, where the use of the speculum had long been insisted on, as an ordinary aid in the diagnosis of even trifling uterine disorders, there was not the same want of knowledge. It was in the unrivalled fields of observation laid open to him when house-physician in the Parisian Hospitals, that Dr. H. Bennet gathered the materials for his first edition; but in the second, which is, in reality, a new work, he has been able to add the results of much additional observation in this country, as well as the fruits of his subsequent reading and reflection. While the author constantly shows himself well acquainted with the researches of his predecessors and cotemporaries, and ever willing to award to them their due share of merit, or of criticism,—yet, it is principally as a record of his own clinical experience, that the present treatise is valuable. He has not entirely convinced us of the truth of all his conclusions, and practical suggestions; but he has laid before us such an amount of solid information, as we venture to assert is not to be found in any other Treatise on Uterine Diseases. We entirely concur in the leading doctrine of Dr. Bennet's work, which he thus enunciates: "Inflammation is the key-stone to uterine pathology; and unless the phenomena which it occasions be recognised, all is doubt, obscurity, and deception". This is an axiom which few in the present day will controvert; but it is also one which may lead different minds to the adoption of different methods of diagnosis and treatment.

Dr. Bennet thus sets forth the fruits of his writings: "Since the first publication of my researches in Uterine Pathology, above four years ago, a marked change has taken place in the opinions of a large portion of the profession,—a change which may fairly be attributed, in a great measure, to the influence exercised by my writings. Several of the most eminent Uterine Pathologists of the present day—amongst whom I may name Dr. Montgomery, (*Dublin Quarterly Journal*, August, 1846,) and Dr. Evory Kennedy, (*Ibid.* February, 1847,) have since then openly advocated views similar to those which I entertain, respecting the frequency of inflammatory affections of the neck of the uterus. Moreover, I am able to state, from positive knowledge, that the practice of nearly all the eminent consulting practitioners in this department of pathology has been greatly modified within that period; and it is but rational to infer, that their theoretical opinions have undergone a similar change."

The special claims of the second edition are thus enunciated. "In the present work, there is much that is original, and new to the profession, both abroad, and at home. I would more especially direct attention to the history of chronic metritis, and of the displacements which it occasions, (of late years so erroneously viewed); of internal metritis, hitherto confounded with disease of the cervical cavity; of inflammation and abscess of the lateral ligaments in the non-puerperal state, never as yet described by any author; of inflammation and ulceration in the cavity of the cervix; of inflammation and ulceration in the virgin, in the pregnant and puerperal condition, in the aged—and in connection with polypus, and with uterine tumours; and to the section on the diagnosis of cancer."

KNOWLEDGE OF THE ANCIENTS. It appears that the ancients had an amount of knowledge of uterine diseases which is calculated to surprise

many of the moderns. The following extract from Paulus Ægineta is interesting. "The uterus is often ulcerated from difficult labour, extraction of the fœtus, or forced abortion or injury of the same, occasioned by acrid medicines, or by a defluxion, or from abscesses which have burst. If, therefore, the ulceration be within reach, it is detected by the DIOPTRA, but if deep seated, by the discharges; for the fluid which is discharged varies in its qualities. When the ulcer is inflamed, the discharge is small, bloody, or feculent, with great pain; but when the ulcer is foul, the discharge is in greater quantity, and ichorous, with less pain. When the ulcer is spreading, the discharge is fetid, black, attended with great pains, and other symptoms of inflammation: irritation is caused by relaxing medicines, and relief by the opposite class. When the ulcer is clean, the fluid is small in quantity, consistent, without smell, thick, white, with an agreeable sensation. When the ulcer is inflamed, we must use those things recommended for inflammations. When it is foul .... the Egyptian ointment without the verdegris answers admirably for the CURE of ulceration." The *dioptra* (διοπτρα) mentioned in the above passage seems to have been a bivalved speculum; hence it appears that this instrument was in vogue at least as early as the seventh century, when Paulus Ægineta wrote: but, as he compiled his account of uterine diseases from much earlier authors, it is almost certain that ocular examination of the os and cervix uteri was in vogue among physicians of a much more remote period. We refer those, who desire more particular information on this curious subject, to the Sydenham Society's edition of the works of Paulus Ægineta, ably edited by Mr. Adams.

THE LOSS OF KNOWLEDGE OF THE DIAGNOSIS AND TREATMENT OF UTERINE DISEASES, possessed by the ancients, is thus most interestingly explained and commented upon. "When Europe was plunged in the intellectual darkness that followed the overthrow of the Roman Empire by the barbarians, science found a refuge among the Arabs; and it was through their labours principally, that the Greek and Roman medical classics were preserved, and became known to their successors in science—the Roman Catholic priesthood. On what is called the revival of letters taking place, several centuries after the overthrow of the Arabian caliphs, all the knowledge of the day—medicine as well as the other arts and sciences which constituted the Quadrivium—was confined to the priests and monks."

"Both the Arabian physicians and the Roman Catholic priests were placed in a position of peculiar delicacy towards their female patients; the former, owing to the seclusion of the female, enforced by Mohammedan customs, and the latter owing to their vows of celibacy. It is not, therefore, extraordinary that the Arabians should merely have transmitted to us in their works the information respecting uterine diseases and midwifery contained in the Greek and Latin authors whom they translated or copied; nor is it extraordinary that the Roman Catholic priesthood should have abandoned midwifery to midwives, and have allowed the practical knowledge of uterine diseases, contained in the works of the ancients and of the Arabians, to fall into abeyance. Neither the Mohammedan nor the monkish physicians were so situated socially, as to be able to prosecute these branches of medical knowledge. Thence it is that midwifery was utterly neglected, and remained a dead letter, so far as science is concerned, until a comparatively recent period,—that of Ambrose Paré, Guilleneau, etc. Thence it is, also, that a cloud of ignorance has from the same cause overshadowed uterine disease until our own day.

"That results directly produced by the existence of a peculiar state of society should have remained in operation for several centuries, after the social condition which created them has itself ceased to prevail, is certainly rather singular; but this is not unfrequently the case, as might be variously exemplified. It would be difficult, however, to meet with a more striking illustration of the fact, than is presented by the history of midwifery and uterine diseases. Up to the middle of the fourteenth century, the practice

of medicine being in the hands of the priesthood only, the neglect into which they fell can be easily understood. It is also easy to understand, that these branches of medical knowledge should have continued to be neglected for some time afterwards, a certain connection long existing between the practice of medicine and the clerical profession. Although Pope Honorius the Fourth, at the close of the fourteenth century, prohibited priests from actually practising medicine, yet, in various countries physicians were bound by oath to celibacy, as was the case till the year 1420 in the University of Paris. It does appear, however, most marvellous that the influence of these former social conditions should still be felt in the medical profession—should still exercise an evident control over medical science in England, a country which has now for three centuries professed Protestantism. And yet, unless we admit that such is the case, how can we account for the existing state of uterine pathology, or explain the opprobrium thrown, until within the last few years, by the governing bodies of our leading medical corporations, upon those who devote their attention to midwifery, and to the diseases of females, inseparably connected with midwifery!" (pp. 7-9.)

The Speculum has been, and still is, much objected to by several British obstetricians of great repute; but while we respect the excellence of the motives of these gentlemen, and give due honour to their zeal, we cannot help saying, that their strictures apply rather to the indiscriminate, or unnecessary use of the instrument. We decidedly deprecate its employment on every vague suspicion of uterine disease, as well as in a pretty numerous class of cases, in which, though we infer the existence of slight congestion or inflammation, (which ocular inspection might verify), we likewise know that, by other means of diagnosis, we may make out their seat and character sufficiently to enable us to accomplish a cure. In such circumstances, we must neither blunt nor rudely shock those reserved and pure womanly feelings, which alike sanction and sanctify the freedoms of English society, and which, in conjunction with religious principle, form the only safe and impregnable barrier against a general corruption of morals, such as France suffered from, antecedent to, and during her first Revolution.

It is not for us—it is not for any man, to lay down *positive rules* by which others are to be regulated, in their methods of diagnosing and treating the diseases of women. Every case must be dealt with in such a way as the symptoms, age, and condition of the patient render necessary, or allowable. Exploration with the speculum or other instrument should, except in a few exceptional cases, never be resorted to in the unmarried. As regards the speculum generally, we would say this: Let every physician, before he employ it, address to himself, *in foro conscientiæ*, this question, and let his conduct be regulated by the reply,—"*Is its use absolutely necessary?*" Our experience coincides with that of Dr. H. Bennet as to the feelings entertained by our countrywomen on this subject. "I have met," says he, "with many objections; but never with a decided refusal, when I have stated that an examination was IMPERATIVELY NECESSARY."

Anatomy and Physiology of the Uterus and its Cervix. The chapter upon these subjects claims our especial attention, and we propose, on the present occasion, to confine our critical analysis to it, reserving the principal part of the volume for future consideration. We think it particularly important, that correct views should be entertained regarding the structure and functions of the Uterus and its appendages, at a time when so many have their attention directed to the cure of dysmenorrhœa and sterility by operative means,—a result which, though perhaps not so often practicable as some imagine, is yet, at the present moment, properly claiming considerable attention. We allude to the various proposals for dilating or incising the os externum, introducing a probe through the os internum, or carrying a whale-

bone catheter into the Fallopian tubes, after the method of Dr. Tyler Smith, and which Sir Benjamin Brodie, one of the highest surgical authorities in the world, has declared not only to be practicable, but to be an operation "safe enough in gentle and cautious hands".[1] For these reasons we lay before our readers the statements of the most recent authors on the anatomy of the Uterus, so far as a knowledge of it is necessary for a proper judgment on the practices to which we have referred.

Before doing so, however, we would remark that, as regards *Sterility*, many cases arise from incompatibility of the parties—a want of suitableness to each other—and to no structural or functional disorder; and, in not a few instances, the removal of barrenness is ascribed to special treatment, when it ought not. We could supply many illustrations in point; but we prefer giving one conveyed to us by a metropolitan accoucheur of great experience, upon the occasion of our alluding to this subject in a previous Number. The following is a verbatim extract from the letter to which we refer:—

"Several years ago, a lady called at my house to consult me respecting her health; and her general appearance, at first sight, indicated that she was far from well. She told me that she had been married nearly six years, but had never become pregnant, unless she had once miscarried, soon after her marriage; on inquiry, I learnt that the only ground for supposing this to be a miscarriage was, the occurrence, at *the regular period*, of a more than usual amount of discharge, together with some coagula, and much pain. It was very evident, that the not having children preyed much upon this lady's mind, and that her delicate state of health was seriously increased by mental disquietude. She had a white tongue; irregular bowels, which she managed badly, being in the habit of frequently taking large doses of saline purgatives; her pulse was small and quick; she complained of much pain in the loins; the urine was pale and abundant; and she was much troubled with leucorrhœa. There was something in the appearance and manner of this lady which led me to suspect, that she had sought relief by going from one doctor to another, without persisting in any plan of treatment for a sufficient length of time: however, I gave her such advice as the case seemed to require, and wrote a prescription for her, the effect of which I requested to be informed of after a short time. On asking her name, to append to the prescription, I fancied, from the confusion exhibited, that 'Mrs. Johnson' was a feigned name, and, upon the whole, did not expect that I should be favoured with another visit. Contrary to my expectation, however, in about three weeks she called again, looking better, and reporting herself to be so. She now became a regular "at home" patient, and I saw and prescribed for her frequently, till, by my recommendation, she went to the sea-side to bathe. A few months intervened, when I received a message to call upon a lady of rank, whom I found to be my former patient, 'Mrs. Johnson'. She was pregnant, and wanted to engage me to attend her labour, and to get some instructions as to how she should manage herself in the meantime. It will naturally be supposed that I took credit to myself, (though by no means to the extent that it was given to me by my patient and her friends), for having been the permitted means of improving her health, and thereby placing her in such a condition as was compatible with conception and the nutrition of a fœtus. It so happened, some time afterwards, that, dining at a medical party, I sat next to a member of the Royal College of Surgeons, who took an opportunity of congratulating me on my attendance upon Lady ——, in her confinement; and he added, 'I believe you do not know how it happened that, after so many years' sterility, she had become pregnant.' 'Oh yes,' I said, 'she had been my patient for some months, and I was so fortunate as to be the means, by improving her health, of restoring to activity and perfection the impaired and incapable faculty of conception.' 'Not a bit of it,'

[1] *Lancet* for 4th August, 1849, p. 119.

said he; 'your treatment of the case had nothing to do with it: the pregnancy of Lady —— was produced in consequence of my having cured my Lord of an old-standing stricture, by means of a caustic-bougie; it was one of the most troublesome cases of the kind I ever met with.' Who shall decide, when doctors disagree? In this case no decision was come to. My friend, the surgeon, was clearly of opinion that no doubt could exist of *his* pretension to the honour, such as it was; nor would I surrender the claim, which I thought might fairly be ascribed to medical regimen and re-instated health. So we both enjoyed the pleasures of our own imaginations, though both, perhaps, lamented that medical experience was so liable to uncertainty and doubt. S. M."

The muscular fibres of the impregnated uterus are easily demonstrated; but, in the non-impregnated state of the organ, they have a rudimentary appearance. In the former condition, its *blood vessels* and *nerves* are also immensely more developed—"its vitality is consequently great, and, as a necessary result, its pathology is that of a highly vitalized organ."

Cellular tissue seems to be entirely absent from the fibro-muscular tissue of the body of the uterus. Jobert de Lamballe states, as the result of his researches, that there is not any, not even between it and the investing peritoneal membrane. In the neck of the uterus, there exists a certain amount of cellular tissue—an anatomical peculiarity which explains various differences in the manner in which the body and neck of the womb are respectively affected by disease.

"The presence of muscular fibres has," Dr. Bennet says, "been denied, but without sufficient grounds. I have myself distinctly seen them in the cervix uteri of a woman who died in the eighth month of pregnancy; and M. Jobert de Lamballe has met with them, both circular, decussating, and longitudinal, in the entire animal creation. The circular fibres are the most numerous, there only being longitudinal ones in the posterior region of the cervix. The circular fibres are distinct from those of the body of the uterus: the longitudinal fibres which occupy the middle posterior region of the cervix are, on the contrary, the continuation of the posterior longitudinal layer of the uterus. Hence, no doubt, it is that Chronic Inflammation of the Cervix Uteri has a much greater tendency to pass on to the posterior wall of the uterus, than to the anterior; the anterior region of the cervix being less intimately connected with the body of the uterus." (pp. 11-12.)

The cavities of the uterus are generally treated of in a very slovenly and inaccurate manner, both in works on descriptive anatomy and obstetric practice. We subjoin Dr. Bennet's description. "The uterine cavity is not, as it is generally described, a 'single' cavity reached by a channel or passage through the neck, but a *double* cavity—one belonging to the uterus itself, and the other to the uterine neck, and each dissimilar to the other. The cavity of the uterus is triangular, and its parietes form curves, the convexities of which are internal. The cavity of the uterine neck is, on the contrary, fusiform, and its lateral parietes constitute regular curves, the convexities of which are external. At the union of the two cavities, there is, during life, a natural stricture or coarctation, which closes the cavity of the uterus. This coarctation, which is not mentioned or described by anatomists, exists, I find, always, or nearly always, in the absence of disease, and is sufficiently great, except soon after parturition, and sometimes for a few days after menstruation, to prevent even a small sound from penetrating into the uterus, unless considerable force be used. From its universality and occasional persistence after death, it must be the result of the anatomical structure of the parts, and probably of the presence of a kind of muscular sphincter. When the mucous membrane of these cavities is inflamed, this sphincter becomes relaxed, and then the uterine probe passes easily into the uterine cavity." (pp. 13-14.)

This coarctation between the cavities of the body and cervix seems to

form a perfect septum, (except under the circumstances noted,) in virtue of the closure of a sphincter muscle. As all other outlets in the body are furnished with structures of this kind, Dr. Bennet's description has analogy

Fig. 1.

Cavities of the Uterus and Cervix, as they really are during life.

Fig. 2.

Uterine Cavities, as represented in Quain's plates.

in its favour: and so far as a hasty examination of a few specimens entitle any one to form an opinion on so important a subject, we are inclined to think that it can be fully borne out by actual observation on the dead body. The point is one of great practical importance, and ought at once to be settled by impartial persons. We say so, because, if Dr. Bennet's anatomy be correct, various considerations of vast practical moment arise with reference to the uterine sound of Dr. Simpson and the Fallopian catheter of Dr. Tyler Smith. This has been noticed by Dr. Bennet in reference to the former. "The uterine sound is a very useful instrument in the diagnosis of diseases of the uterus. The profession are indebted to Professor Simpson for its application to uterine pathology; the idea, although very simple, not having occurred to any previous practitioner. The uterine sound is merely a graduated metallic bougie, with a handle. The inches and half inches are figured; and two inches and a half from the end, there is a small protruberance, which marks the depth of the uterine and cervical cavities in the healthy state. In examining a patient with the sound, in order to ascertain whether it passes freely through the cervical cavity, and enters the uterus, it is very necessary to be certain that it really does penetrate as far as this protuberance. The fact of the operator being able to replace the womb, or to turn it upwards, by no means proves that such is the case: the purchase obtained on the uterus, when it only enters as far as the os internum,—that is, one inch and a half, or one inch and three quarters,—

being quite sufficient to enable the practitioner to accomplish this. In order, therefore, to be quite certain, he should carefully ascertain, by the touch or the eye, that the sound has really entered above two inches. I am convinced, that, for want of care in ascertaining this point, errors are continually made, even by those who are in the constant habit of using the sound. It is generally considered that it has passed into the uterine cavity if the womb can be raised on it, when in reality, as we have seen, it may only have reached the os internum. I have witnessed this mistake repeatedly.

"The sound should not be introduced into the cavity of the uterus, in my opinion, except as a necessary means of diagnosis. Its contact with the lining membrane of the uterine cavity is frequently attended with pain, and often by nausea, faintness, and a slight loss of blood. This leads me to conclude that the internal stem of Dr. Simpson's permanent pessary does not, generally speaking, reach the uterine cavity, but merely remains in contact with the mucous membrane of the cervical cavity, which is infinitely less sensitive. Were it otherwise, I cannot conceive that the continued presence of the pessary could be borne without serious accidents occurring.

"The uterine sound is also useful to bring the cervix fully into view when only partially within the field of the speculum, and to depress the lips of the open os uteri, so as to allow the eye to penetrate and to ascertain how far the morbid dilatation, the result of inflammation, reaches. In the absence of the uterine sound, a common bougie will answer the same purpose." (pp. 503-4.)

Dr. Tyler Smith states, that the delineations which we have copied from Dr. H. Bennet's work have been appealed to, as proving "the difficulty or impossibility of reaching the Fallopian canals by his method". He has from that cause communicated the following observations to the *Lancet* of Aug. 4, 1849. We quote them because they show that, however accurate may be the description of Dr. Bennet, and however numerous may have been the dissections on which it is based, it is not yet undisputed in some important points. The careful examination, exact measurements, and mathematically accurate delineations of a series of uteri being still required, we simply subjoin an extract from Dr. Smith's communication, abstaining from criticism or comment till further elucidations have appeared.

Dr. T. Smith says, "That what I have advanced is correct, will be shown by a woodcut which is subjoined. It is copied exactly from nature by the artist. The cut represents the antero-posterior section of the uterus of a young woman aged 21, who had never been impregnated, and in whom the hymen was perfect. The uterus here represented was above the average size of the nulliparous organ, but was otherwise well-formed. Any one who may have noticed the engravings of the uterine cavity, as generally given, will see that this differs very materially from them in several particulars, which, as regards the operation upon the Fallopian tube, are of considerable importance. During life, the os internum and the canal represented above it are slightly more contracted than appears from the wood-cut.

Virgin Uterus and its Cavities.

"The uterus is usually described

as consisting of a cervix, body, and fundus. The description of the uterine interior naturally admits of a similar division. There are—1, the slightly bulbous or fusiform canal of the cervix; 2, the almost cylindrical canal of the body of the uterus, contracted at its point of continuation with the cervical portion, and slightly also at its entrance into the triangular cavity of the fundus; and, 3, the triangular cavity of the fundus itself. These three portions are correctly represented in the above woodcut. It will be seen, that the angle of the entrance of the Fallopian tube into the uterus on each side is very acute, but not more so than is found in nature. As I have said, these angles are generally very ill-defined in anatomical engravings. The incorrectness must arise from the uterine cavity not being entirely laid open up to the tubes, or else the drawings must have been made some time after the section of the uterus had been prepared, in which case it soon falls out of its definite shape. At least, I know not how otherwise to account for the errors of delineation which have been so frequently made.

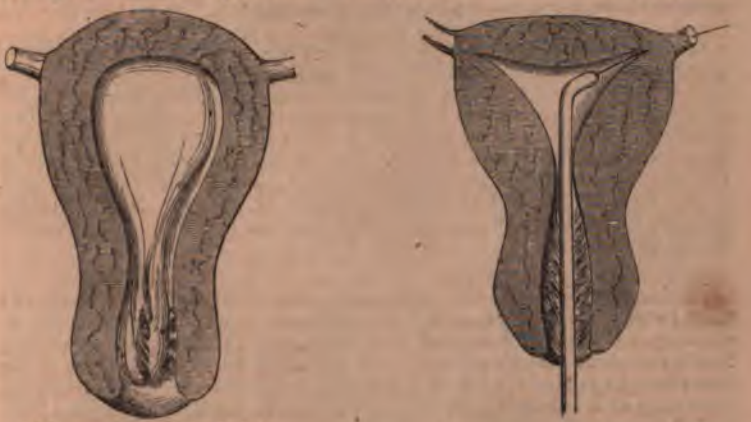
"The best engravings of the uterus which I have met with are contained in the new work of M. Paul Antoine Dubois, 'Traité Complet de l'Art des Accouchements,' of which, I believe, the first part only has yet appeared. M. Dubois gives representations of the exterior and interior of both *nulliparous* and *multiparous* uteri. But judging from the organs I have examined —and I have diligently inspected a considerable number since I commenced the present inquiry—I find that his engraving of the nulliparous organ, though more correct than any others I have seen, is not free from error. In the first place, the organ is certainly below the natural size in the adult woman, particularly in length. In the next, M. Dubois has altogether omitted to represent the canal of the body of the uterus between the cervix and the triangular cavity. In this woodcut, the cavities of the fundus and cervix communicate directly; but the Fallopian angles are given with striking fidelity, and may be contrasted with the representation of the same parts in other obstetrical works. In this particular, the engravings of M. Dubois bear out my description of the upper part of the uterus in my first paper, (vide *The Lancet*, May 9,) and are very similar to the woodcut given above. I am extremely glad to produce from so eminent an authority a representation of this part of the organ, which shows most satisfactorily the ease with which the natural conformation of the nulliparous organ guides an instrument towards the uterine openings of the Fallopian tubes. Let any one compare the two following woodcuts—the one of the nulliparous, the other, of the multiparous uterus, from M. Dubois, and it will be at once evident that, in the nulliparous organ, in which sterility most frequently exists, there is a natural pathway, or groove, leading to these canals. In the multiparous uterus, on the contrary, the internal cavity is ovoid, instead of triangular. There is nothing in the latter to direct a catheter or bougie towards the tubes. This struck me very much when making my first experiments. The uterus having been developed to the full size of gestation, does not return to its primitive shape. The triangular cavity of the fundus disappears after complete ingravidation. Hence the Fallopian operation is comparatively easy and natural in the nulliparous organ, in which it is chiefly or entirely required, while it is more difficult in the multiparous uterus, when the organ has been fully developed.

Nulliparous Uterus, after M. Dubois.

The above engraving contrasts very strikingly with the uterine cavities

represented in the first woodcut, particularly as respects the Fallopian angles and the conformation of the upper part of the canal of the body of the uterus.

"I have taken the opportunity of giving a woodcut, from M. Dubois, of the uterus laid open, in which a catheter has been added, to show the operation upon the left Fallopian tube. This renders the matter more clear than



Multiparous Uterus, after Dubois.

I was able to make it in the woodcuts of my former papers.[1] I prefer to give the engraving of M. Dubois for this purpose, rather than my own, because there can then be no possible suspicion of adapting the organ to the instrument. M. Dubois very happily designates the cornua of the uterus as the infundibuliform angles—'les angles infundibuliformes.' A better term than this could scarcely be devised. The woodcut shows the operation with tolerable accuracy; but by passing the beak of the catheter to the roof of the cavity, and inclining it a little on one side, it is easy to guide the extremity of the instrument quite into the angle, so as to render the wrong direction of the bougie difficult or impossible. The bougie is represented too delicately,—the tube admitting of an instrument of considerably larger size.

I have been thus minute in describing the peculiarities of the nulliparous uterus, because I am well aware that many persons have felt a difficulty in admitting the practicability of the operation. Certainly, the descriptions and representations of the uterine cavities commonly met with, were not likely to lessen any hesitation of this kind. An examination of the recent nulliparous uterus, or of faithful representations of its interior, must, I am confident, be followed, with all candid observers, by a belief in the possibility of exploring these tubes. As a striking instance of the little exact knowledge which obtains of the infundibuliform angles, I may mention, that a northern critic, speaking of the operation, says, that the Fallopian apertures are 'beset with small rugæ of the soft mucous membrane', and that it will be difficult to avoid them. To this the reply is easy. There are no rugæ whatever, nor signs of rugæ whatever, in the Fallopian angle, or at the entrance to the Fallopian tube! This part of the organ is remarkable for its density and smoothness. With a flexible bougie, it would be quite impossible to perforate the dense and thick parietes of the uterus in this situation. I know readily when the bougie has not entered the tube, because, holding the extremity of the catheter lightly in the finger, its beak is always turned away from the Fallopian tube, upon which the attempt is made, over to the other side of

[1] London Journal of Medicine, July, p. 676.

the uterus, if the bougie happens to pass from the extremity of the catheter, and, instead of entering the tube, should impinge upon the wall of the uterus. The slightest resistance is sufficient, while the catheter is held lightly, to turn it aside. More than this, with a practised touch the slightest impediment can be felt. As one of the highest surgical authorities remarked to me, the difficulty and nicety of the operation are not so great as the passage of a catheter through the urethra in enlarged prostate."

FREQUENCY OF INFLAMMATION OF THE UTERUS. The anatomical differences between the structure of the body and neck of the womb, as explained by Dr. H. Bennet, enable us very easily to understand why inflammation of the former is a rare, and of the latter a common affection. Many of our best practical men hold different opinions as to the frequency of inflammation of the neck of the womb; and among others Dr. Ashwell, who has enunciated very strongly his sentiments on the subject. We have already said, (January, p. 63,) that on this point we coincide with Dr. H. Bennet. Most assuredly, nineteen out of every twenty cases of leucorrhœa and menorrhagia are inflammatory.

Having now displayed the preliminary parts of Dr. Bennet's Treatise, we must pause; but we hope, on a future occasion, in one unbroken article, to enter upon the special details of his pathology and practice, which we may in the meantime remark are elaborate, scientific, and useful. Some of his views may be pushed too far, and surgical interference may be advised too commonly as a substitute for milder treatment; yet the pathological ideas which pervade the volume are sound and true, and such as every capable observer may turn to good account in the management of Uterine Diseases.

(To be continued.)

DEMONSTRATIONS OF ANATOMY; being a Guide to the Knowledge of the Human Body. By GEORGE VINER ELLIS. (Part II.) London: 1849.

MR. ELLIS has punctually performed his promise of completing his *Demonstrations of Anatomy* by the beginning of October. We can add but little to the notice we gave of the first part of the work. The concluding part is of equal excellence; and of the whole we will assert, that, as a guide-book for the student in the dissection-room, it is not equalled by any which has come under our notice.

LECTURES ON ELECTRICITY AND GALVANISM, in their Physiological and Therapeutical Relations; delivered at the Royal College of Physicians. Revised and Extended. By GOLDING BIRD, A.M., M.D., F.R.S., F.L.S., Assistant Physician to, and Professor of Materia Medica at, Guy's Hospital. pp. 212. London: 1849.

These Lectures, having appeared in the *Medical Gazette*, are already well known to the profession. Like everything which proceeds from their able author, they are eminently lucid. As to the extent to which Electricity and Galvanism may be used in therapeutics, certain differences of opinion prevail; but, from the great importance of the subject, we trust that its investigation will be pursued by those, who have opportunities of making the necessary observations on a large scale. We strongly recommend the study of Dr. GOLDING BIRD'S valuable little volume.

PRACTICE OF MEDICINE AND PATHOLOGY.

M. EDOUARD VANDEZANDE ON COLCHICUM IN DROPSY.

The preparations of *Colchicum Autumnale* are usually employed solely on account of their efficacy in rheumatism and gout. Störck, however, who introduced this plant into the materia medica in 1763, recognised it as a powerful hydragogue, and employed it as a succedaneum to squills. In spite of his recommendations, and of the favourable reports given by Pleuck, Quarin, Zacht, Cullen, and others, the employment of Colchicum in dropsy has not extended, and at last has been almost entirely neglected. In later times, the attention of some physicians has been fixed afresh on the power which Störck recognised in colchicum. Among others, Dr. Kennedy, in a memoir presented to the Surgical Society of Ireland, relates that he has, in a large number of dropsical cases, obtained astonishing results from the employment of the vinous tincture of this plant. Having also made use of this preparation in some cases of serous infiltration and accumulation, I have thought it not unprofitable to give a summary account of the results which I have obtained; first, because they are of a nature to lead my professional brethren to have recourse to the hydragogue power of the plant in analogous cases; and also, because the effects of Colchicum have not always been so complete or so manifest as in the cases which I have observed, of which I shall record the principal.

Case I. Jean Bulckaert, a workman, aged 42, of weak constitution, was seized, three years ago, with intermittent fever in Flanders, where, as is well known, this disease is endemic. Having been under treatment for several months in the hospital at Dixmude, he recovered; but, on his returning home, where he could only procure insufficient food, the disease was not long in recurring. Instead of then applying for medical advice, he had recourse to some domestic remedies, which produced no effect. The patient soon presented all the characters of paludal cachexia. The lower extremities, and the whole body in succession, became œdematous; the abdomen was distended, and the respiration impeded. It was when in this condition that Bulckaert first applied to me. After febrifuge tonics and diuretics had been used for six weeks, the œdema disappeared, and the state of the patient's health seemed satisfactory, although there still remained a slight enlargement of the spleen, of which he neglected to get relieved. Last April, two years after the first appearance of the fever, I was again sent for by him. The dropsy had reappeared, but this time it had not been preceded by an attack of fever: there was excessive serous infiltration of all parts of the body, and the urine was slightly albuminous. The same treatment as before was adopted, but without the least success: I then prescribed the wine of Colchicum in daily doses of 6 grammes (about ʒii), increasing the dose by a gramme daily. The medicine was well borne by the patient; it was increased to 40 grammes daily; this quantity was continued for four days, at the end of which time the patient was free from dropsy. During the latter period of the treatment, the alvine evacuations were abundant, and the quantity of urine was considerably increased.

Case II. A woman, named Messinen, became dropsical after an attack of confluent small-pox: the dropsy was preceded, for some days, by paroxysms of intermittent fever. Neither nitric acid nor heat showed the presence of albumen in the urine. I treated her with wine of Colchicum, in doses of eight grammes, without any other medicine. At the end of a fortnight, the anasarca had disappeared, and the patient felt herself completely restored.

Case III. A poor woman, who had twice been attacked with articular

rheumatism, from which had resulted an organic affection of the heart, with habitual dyspnœa, observed her lower extremities to become œdematous, without any known cause. The extreme misery in which this woman was, and her dirty habits, gave but little hope of a prompt result from any treatment whatever. I resolved, however, to give her Colchicum, especially as I thought that the rheumatic diathesis was connected with the production of the dropsy. The medicine was not well borne, in doses of eight grammes. I diminished the dose by one-half; but, in a few days, I had to discontinue its use entirely, in consequence of the occurrence of vomiting, dry tongue, and intense thirst. Some time after, when the symptoms of gastric irritation had been removed, I again employed the Colchicum in smaller doses, but without any effect. Mild tonics were then prescribed; and, under their use, the œdema at length disappeared. The woman has still œdema of the feet.

Case iv. A miller, addicted to the use of alcoholic liquors, had for some days complained of *courbature*, loss of appetite, and a remarkable diminution of urine, when he perceived symptoms of dropsy. I first saw him on the 15th of last May. The lower extremities, the scrotum, and the hands, were very œdematous; the face was much puffed up; the abdomen was hard and distended; the respiration was impeded. On testing the urine with heat and nitric acid, a large quantity of albumen was detected. The tongue was furred, the stools unfrequent, and the pulse somewhat febrile. The patient complained of no pain in any part of his body. With the object of cleansing the digestive canal, I prescribed an emeto-cathartic, consisting of a decigramme (1½ grain) of tartar emetic, 32 grammes of magnesia, and 250 grammes of water, of which a wineglassful was to be taken every half hour. The patient had several evacuations from the stomach and intestines, without any marked effect on the dropsy. On the 18th of May, wine of Colchicum was ordered in doses of six grammes, and was very easily supported. The next day, I increased the quantity by two grammes, and continued it for ten days. As this treatment produced no amelioration of the symptoms, the patient importuned me to try some other means. The urine being still albuminous, I had recourse to the internal administration of nitric acid, as recommended by Professor Forget. This medicine had the desired effect. In four or five days, there was a remarkable diminution in the size of the scrotum, while the œdema of the extremities decreased; the abdomen became softer, and the face less puffy; the urine was more abundant and less albuminous. In spite of the continued use of the medicine, the patient remained in the same condition for some time; and it was only after using Bestuchef's tincture[1] for some days, that the œdema and cachexia disappeared, to be succeeded by rapid convalescence, and soon by recovery.

These observations appear to me to be of a nature to induce my professional brethren to have more frequent recourse to the use of wine of Colchicum, in the treatment of certain dropsical affections. I am persuaded, though unable to specify the cases in which its employment is specially indicated, that this medicine may often be advantageously substituted for the hydragogues in most common use. At all events, I would not recommend it in all cases of albuminous nephritis; for there are medicines which act more directly on this disease, and which, therefore, seem to me to be preferable. [*Annales de la Soc. d'Emul. de la Flandre Occidentale*, as quoted in the *Revue Médico-Chirurgicale de Paris* for August, 1849.]

FACTS ASKED FOR, ON WHICH TO ESTABLISH THE TRUE PATHOLOGY AND TREATMENT OF CHOLERA.—MOVEMENT IN THE PROFESSION.

The Royal College of Physicians of London, the Provincial Medical and Surgical Association, the Western Medical and Surgical Society of London,

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[1] Bestuchef's tincture, otherwise called Klaproth's tincture, or ethereal tincture of chloride of iron, is composed of dry perchloride of iron, one part; Hoffmann's liquor, seven parts.

and we rather think some other bodies, have issued important circulars, calling for information on the subject of Cholera. All, most properly, ask for *facts apart from theory or opinions.* In reprinting the documents which have been issued, we would very earnestly impress upon the profession the duty which is now laid upon every member, to come forward with such a contribution to the general store as he may be able to give. We would also suggest that the different bodies might, perhaps with great advantage, co-operate, and issue *one*, in place of separate digests of information. Might not the Provincial Association, for example, have a representative in the Cholera Committee of the College of Physicians? with which committee, we think, the arranging and digesting of the reports might safely be left. From the subjoined circulars and queries, we feel confident that a committee better fitted for the duty could not be found. A general co-operation of the whole profession with the College of Physicians is what we would like to see. If we cannot combine as political bodies, let us all join, heart and soul, in this great pathological inquiry. Our broken ranks and paltry jealousies deprive us of our proper social position, and of our facilities of enlarging the boundaries of science. The present occasion offers an opportunity of union, which, if made use of, may lead men to know and appreciate each other more than they have yet done, and thus tend to good in many ways.

COLLEGE OF PHYSICIANS: THEIR CIRCULARS.

Royal College of Physicians, Pall Mall East, 6th September, 1849.

Sir,—The Cholera Committee have instructed us to address you again, for the purpose of explaining the object of the resolution transmitted to you on the 6th ult., and of offering some suggestions as to the mode in which your co-operation could be most efficiently rendered.

The opinions of the profession are divided on many points relating to the pathology and treatment of Cholera; and it is not to be expected, that the doubts and discrepancies existing will be finally settled by the evidence which any individual member of the profession may adduce. But the committee have a confident hope, that valuable and conclusive results, in regard to at least some of the disputed points, might be obtained, by collecting and comparing the observations of hospital physicians, and of the many other members of the College who have practical experience in the present epidemic.

Such a method of inquiry appears to be especially applicable, and indeed indispensable, in any endeavour to estimate the relative values of the various modes of treating Cholera, respecting which the evidence is at present so conflicting. With the co-operation of the members of the College, the committee may, it is hoped, in some cases, be able to fix the kind and amount of benefit derivable from particular remedies or plans of treatment; they may establish the superiority of some remedies; and, with regard to others, they may show that their use ought to be at once abandoned.

The following list includes the principal modes of treatment hitherto recommended. It seems desirable that every member of the College, who has the necessary opportunity, should submit one or more of these to a systematic trial in a series of cases. But the committee request, that you will communicate to them any observations you may have made, on the effects of other remedial means not included in this list.

Calomel, in large doses; in smaller and frequent doses.
Calomel with opium.
Opium in large doses.
Ammonia; alcoholic liquids; essential oils and aromatics; camphor and musk.
Acetate of lead; sulphate of copper; the vegetable astringents.
Quinine; arsenic; iron.
The saline plan, as recommended

The tartarized antimony plan, as recommended by Dr. Billing.
Emetics.
The free administration of cold water and ice; the cold bath and cold douche.
The application of the "wet sheet".
Injection of saline or other fluids into the veins.
Bleeding.
Electricity.

With regard to the form in which your observations on the results of treatment may be communicated, the committee would merely suggest that, with a view to the subsequent comparison of the facts contributed by different observers, a statement, not merely of the number of cases treated with each remedy, and the main results, but also of some particulars of the cases, is desirable. The following points appear the most important, with reference to the object in view:—

The age and sex of each patient.

The period of the attack at which the treatment was commenced.

The severity of the attack, as indicated by—

1. The pulse,
2. The state of the surface, especially of the face and extremities, as to temperature, moisture, and colour.
3. The appearance and amount of the intestinal evacuations.
4. The existence and degree of urgency of the vomiting and cramps.
5. The state of the urinary secretion.

The apparent immediate effect of the remedy on the symptoms.

The duration of the state of collapse, whether fatal or not, after the commencement of the treatment.

And, in cases of recovery from collapse, the supervention or not of the state called the "consecutive fever".

The preceding observations have reference, more especially, to the treatment of the disease in the stages of impending, and complete, collapse. But the committee would gladly learn the results of your experience relative to the means of arresting the diarrhœa which, in many instances, precedes the stage of collapse, and of restoring the healthy action of the kidneys when collapse has been recovered from.—(See the Queries, Nos. 6 and 10.)

Lastly, the committee request that you will communicate to them the results of any inquiries you may have instituted into the morbid anatomy of Cholera, or into the chemical and microscopic analysis of the blood and secretions in the different stages of the disease, and any general observations on the pathology of Cholera. The series of queries, appended to this letter, embraces some of the more important questions, which might be elucidated by the combined experience of the members of this College. But it is not desired by the committee, that, in any communication with which you may favour them, you should limit your remarks to the subjects of those queries.

We are, Sir, your obedient humble servants,

WILLIAM BALY, WILLIAM W. GULL,
Secretaries to the Cholera Committee.

QUERIES.

1. Can you communicate to the committee any facts observed or investigated by yourself, which appear to you demonstrative of the contagious or infectious nature of Cholera, or of its communicability in any way?
2. Can you detail any facts illustrative of the influence of deficient ventilation, damp, foul air, and bad water, respectively, or of other external circumstances, in determining or favouring the production of Cholera?
3. What are the particular states of body or mind, which, according to your experience, have most frequently predisposed individuals to be attacked by the disease?
4. What are the groups of symptoms which have preceded the full development of the attack of Cholera?
5. Have you observed any distinctive marks by which diarrhœa, about to pass into developed Cholera, may be recognized?
6. Does it accord with your experience that Cholera, in the stage of "serous" or watery diarrhœa, can with facility be checked? What means have you found most effectual in attaining this object?
7. Have any facts come under your notice, which, independently of theoretical views, would elucidate the question, Whether the affection of the

intestinal mucous membrane in Cholera is the primary disease, or one of its secondary effects?

8. Can you furnish the committee with the particulars of cases, in which the rapidity of the fatal collapse has borne no relation to the amount of fluid discharged from the blood-vessels, either through the intestinal mucous membrane, or through the skin?

9. What are the pathological conditions which you have observed in the "consecutive fever"?

10. What means have you found most successful in re-exciting the function of the kidneys, after the stage of collapse has passed?

Royal College of Physicians, Pall Mall East, 13th October, 1849.

Sir,—We are instructed by the Cholera Committee to transmit to you the accompany copies of the letter issued on the 6th of September, and to request that you will distribute them amongst those members of the profession in your neighbourhood, not members of the College, who have had the largest experience in the epidemic now subsiding. Any aid which those gentlemen may afford the committee, in furtherance of the objects indicated, would be received as an obligation.

The committee are also desirous of obtaining your co-operation in a special inquiry respecting the origin and mode of propagation of the Cholera. They believe that much might be done towards the elucidation of this important question, by collecting authentic information in regard to the first cases of the disease in the several towns, villages, and public institutions throughout England. They have accordingly directed us to submit to you the subjoined queries, and to beg the favour of your obtaining for them as detailed and precise answers as may be possible:—

1. Had the person first attacked with Cholera in ——— recently been in an infected place? or had he received into his house clothes or other articles, which may have conveyed infection? or had he been in contact with strangers, coming from an infected locality?

2. If the disease appears not to have been introduced in any one of these ways, is it possible that the drinking-water was the means of conveying the infection, by its being contaminated in its previous passage (as a river or canal) through infected places?

3. What was the character of the part of ——— in which the first case occurred, as regards elevation, drainage, supply of water, density of population, ventilation, and cleanliness?

4. Did the first few cases occur simultaneously? or after what intervals did they succeed each other?

5. Is there any evidence or probability of there having been communication, or near approach, between the first patient, or patients, and those next affected?

The following queries have reference to the communicability of the disease, but do not relate especially to the first cases:—

6. In the instances where several cases have occurred in the same house, have they been simultaneous or successive?

7. Have any persons attending on Cholera patients, or employed to wash the clothes or bed-linen of such patients, been soon afterwards attacked with the disease?

8. Where several persons in one house, or in contiguous houses, have been attacked, in a district otherwise free from the disease, has it been discovered that the water used for drinking had been contaminated by a sewer, drain, or cess-pool? or have any other causes appeared, which would explain the particular limitation of the disease?

9. Can you learn that the disease has apparently been conveyed to neighbouring healthy places, by infected persons leaving?

In conclusion, we have to ask of you the favour of an early reply to the present, as well as the previous, letter of the Committee. It is desirable that all communications should be sent in by the 15th of November, or as soon afterwards as possible. We have the honour to be, Sir,

Your obedient humble servants,

WM. BAILY, WM. W. GULL,
Secretaries to the Cholera Committee.

It would be very difficult for the most hypercritical to object to a phrase, or even a word, in the above documents. They have evidently been framed by physicians, who have not only read and reflected much upon the pathology and treatment of Cholera, but who have also had extensive clinical experience in the disease. One or two additional points of information may occur to some, we doubt not; and perhaps it would have been well to have included a request for any facts connected with Cholera which the respondent might possess, even though not embraced in the queries. Some might have observations to communicate on the sequelæ of Cholera, upon the type of other diseases during the epidemic of Cholera, upon recovery from the cold stage by those who had no medical treatment: and others might imagine they had statements of value to make regarding other medicines than those specified, among which we might cite, as examples, sulphur, and the camphor-chloroform mixture, remedies which have been largely used by some, especially for the cramps. In reference to the calomel treatment in the stage of collapse, it would be well for the stools to be examined, for the purpose of determining the extent and rapidity with which the unaltered drug is washed out by the serous discharges.

It is not merely *desirable*, as stated by the secretaries of the Cholera Committee of the College of Physicians, to have *particulars of the cases* in which each mode of treatment was employed—it is *absolutely essential*. No statement of treatment is worth anything, unless accompanied by a full detail of each case in which it was tried,—recorded, moreover, *not from memory*, but at, or immediately on quitting, the bedside of the patient.

THE PROVINCIAL MEDICAL AND SURGICAL ASSOCIATION, by means of its wide-spread and numerous members, possesses extraordinary facilities for obtaining a correct digest of the history of Cholera in the provinces. The following is a copy of the official paper:—

INQUIRY ON CHOLERA.—In compliance with the resolution passed at the annual meeting held at Worcester, the annexed questions have been carefully framed; and it is earnestly requested by the Council that the members of the PROVINCIAL MEDICAL AND SURGICAL ASSOCIATION will assist in this laudable purpose, by forwarding as full and complete a series of answers as possible, to Mr. Hunt, 26, Bedford-square, London, who has kindly undertaken the inquiry.

CHAS. HASTINGS, President of the Council.

QUESTIONS.

1. During the prevalence of the epidemic, has your own neighbourhood, town, or district, been *exempted* from the visitation? If so, can you mention any local circumstances which may account for the exemption? Was the district healthy during the visitation of the Cholera about the year 1832, and did circumstances then exist which may be supposed to have protected it?

2. If the Cholera[1] *has* appeared in your district, how many cases have you seen? how many of these have been fatal?

[1] In using the term *Cholera* or in responding to any question concerning it, please to adhere strictly to this definition,—"The term Cholera shall be restricted to that so frequently fatal form of the disease in which there are vomiting purging, cramps, and 'rice-water' evacuations, and to that still more formidable state of collapse unaccompanied by these symptoms; that the term Bilious Cholera, shall apply to the disease formerly called Cholera Morbus, in which there is both vomiting and purging of *bile*, with cramps; and that the term Diarrhœa shall be confined to those cases in which there are simply frequent and numerous fluid alvine discharges, *without either* vomiting or cramps." *Prov. Med. and Surg. Journ.*, Sept. 5, p. 490.

3. *When* did the disease break out, and *how long* did it prevail? Please to state generally whether many persons were simultaneously attacked, or otherwise; and whether it commenced contemporaneously in more than one *site* in the same town or district, or whether it appeared to spread from one point only. Were there any peculiar circumstances observable in its local character, or in the course or direction of its advance, which may throw any light upon the important question, whether the disease be of a *contagious*[1] nature or otherwise?

4. Have you invariably been able to trace the disease to *local impurity of the atmosphere*, or have you seen it attack persons living in a pure air, apart from grave-yards and other sources of putrefaction, in well-drained and well-ventilated dwellings? In cases of the latter description, if any have been observed, has there been any intercourse with the sick which may tend to establish the doctrine of *contagion*, or the reverse?

5. Did the Cholera appear in your neighbourhood *with* or *without* the general and contemporaneous appearance of the *milder forms* of disease,—diarrhœa, bilious cholera, etc.? Has dysentery or typhus been prevalent or otherwise?

6. Were its ravages indiscriminate as to personal vigour, age, sex, station, occupation, etc.; or might the attacks be traced to some *predisposing personal cause*,—as weak bowels, intemperance, debility, fear, errors in diet, uncleanly or sedentary habits, or impaired health from any cause?

7. Were "premonitory" symptoms of general occurrence, or did the disease frequently appear suddenly in its malignant form, with violent cramps, vomiting and purging, "rice-water" dejections, and rapid collapse?

8. Did the symptoms differ from those generally observed and frequently described? Had the disease any peculiar type, either of mildness or malignity?

9. Are you aware of any exempting circumstances, of any description, which have uniformly protected certain individuals from the disease,—such as trades, habits, diet, etc., not inclusive of local habitation?

10. Can you throw any light on the *physical origin* or remote cause of the recent or former visitation? Are you able to say, from your own observation, that the general symptoms and history of both are similar? Have you instituted any researches into the density, humidity, temperature, or electro-magnetic phenomena of the atmosphere; especially, have you inquired into the relative quantity of ozone existing in the air during the prevalence of this epidemic or the former visitation; and have you compared it with the proportion observable during the last visitation of the influenza?[2] Have you observed the progress of the Cholera to be arrested by storms, wind, or rain?

11. Have you made any *post-mortem* examinations of fatal cases of Cholera, and with what result? Do you know of any circumstances which justify the immediate interment of the dead? Did you ever observe Cholera patients show signs of organic life for hours or days after apparent death?

12. Can you describe any method or principle of TREATMENT which has proved successful in so large a number of cases of *Cholera*, as to commend it to universal adoption? If so, has not the method frequently failed in other hands, and can you explain the cause of failure?

13. What mode of *treating* the epidemic *diarrhœa*, and premonitory symptoms generally, have you found most successful?

14. Can you suggest any means of preventing or arresting the spread of the disease, in the event of any future outbreak?

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[1] A house or district may be *infected*, so as to spread a disease not strictly *contagious*. Respondents are therefore requested to confine the latter term to evidence of communication by personal approach or contact.

[2] See an article on the Causes of Cholera by MR. ROBERT HUNT, in the *Athenæum*, Sept. 1, 1849.

15. What is your opinion as to the propriety of removing the inhabitants who have not taken the disease, from the infected dwellings, to houses of refuge, in situations where the presumed causes of the disease are not in operation?

Western Medical and Surgical Society of London. This Society deserves very high praise for the zeal and excellent direction of its labours in connexion with Cholera. It has also the merit—no small one—of having been the first body in the profession to come forward with a regular and scientific plan for observing and reporting Cholera cases.

About the end of September 1848, when the first cases of epidemic Cholera occurred in London, the first steps were taken; and on the 15th of October, a very full meeting was held, to consider what plan ought to be pursued. It was universally lamented, that the epidemic of 1832-3 should have left behind it so little authentic and positive information; and it was anxiously inquired, whether the Society might not hope, by timely exertion, to derive more satisfactory results from the epidemic which was then evidently approaching. One way to do so, seemed to be the obtaining records of such a number of cases as would justify conclusions from their analysis. But it was obvious, that these records would not be of value, unless they entered into considerable detail; and that, from practitioners actively engaged, such detail could neither be expected nor obtained, without the aid of some plan whereby their attention might at once be called to the points chiefly to be noted. There would be this further advantage, too, from an uniform plan, that the subsequent tabulation and analysis would be rendered much easier. These views were embodied in resolutions, unanimously agreed to, and made public through the *Lancet* and *Medical Gazette*, of October 21st and 27th respectively; and a committee was appointed to draw up the plan. The committee devoted itself incessantly to its labours, and early in November the plan was completed.

The tabular form consisted of a folio half-sheet, one side of which was ruled to receive all the details of the case, under the heads of "State of the countenance, and general aspect of the patient; state of the tongue; state of the skin; state of the pulse; state of the voice and respiration; character and frequency of the vomiting; of the stools; of the cramps; state of the urinary secretion; state of the nervous system", etc. etc. The paper was so ruled as to admit of eight separate observations on each of these points; it being considered that this number would be sufficient for a protracted case, while, in a rapid case, not more than two or three could be expected. On this side of the sheet, a space was allowed for preliminary inquiries, including the occupation, habits, previous health of the patient, as well as the symptoms, if any, exhibited up to the appearance of those characteristic of the disease, the locality in which he dwells, etc. etc. Another space was allotted for any general observations on the case which might occur. The other side of the half-sheet was divided into two portions: one intended for the record of the treatment pursued; the other for the entering the state of the organs at examination after death, where such was undertaken.

A form, thus completed, was capable of comprising all the details of a single case. Several hundred of them were printed at the expense of the Society, and delivered (a certain number to each) to all the practitioners, whether members or not, residing in Chelsea, Pimlico, Brompton, Kensington, Hammersmith, Putney, and Fulham. Along with them, was sent a circular letter explanatory of the purpose of the Society, requesting that a record of each case that might come under the practitioner's care might be entered on the form, and returned to the Society for analysis; and desiring information of any kind which might throw light on the disease, especially on the circumstances attending its outbreak in any *fresh* locality;

the existence or non-existence in each case of premonitory diarrhœa; its character and amount, the prevalence or not of ordinary diarrhœa, etc. etc. It was also requested that specimens of the blood, of the matters vomited, and of the characteristic dejections, might be forwarded for chemical and microscopical examination. Such was the plan proposed for the investigation of the disease. In carrying it out, the Society was obliged, for obvious reasons, to limit its operations to the district mentioned—that in which the members and those with whom they could more readily communicate, resided; but the hope was entertained that the plan would be adopted, or improved upon, by other Metropolitan and Provincial Societies, acting each within its own district. For this purpose, copies of the tabular plan were forwarded to all the London Medical Societies, and to such of the Provincial Societies as desired them; and official letters were written by DR. SEATON, the Secretary, and published in the *Medical Gazette*, of October 27, and November 17, and in the *Lancet* of corresponding dates. If the hopes had been realized, there can be no doubt that there would now have existed materials for a far more complete history of the epidemic, based on more comprehensive data, than any we are now likely to attain. The Medico-Chirurgical Society of Bristol alone, which has since earned for itself so much honour in reference to Cholera, recognised the value of the scheme, and adopted, with slight alterations, the printed forms for cases.

As an addendum to what we have said in reference to the plan and exertions of the Western Medical and Surgical Society, and its able and zealous secretary, Dr. Seaton, we subjoin the following communication from MR. F. S. HADEN, which appeared in the *London Medical Gazette*, of October 19th, 1849.

"A PLAN TO INSURE RAPIDITY AND UNIFORMITY IN CHOLERA CASE-TAKING.

Sir,—In October, 1848, the Western Medical and Surgical Society of London issued a tabular form for uniformly reporting cases of Cholera. In this form a space is allowed for preliminary inquiries—for successive observations of the symptoms in detail—and for recording the condition of each organ at an examination after death.

"I have considered, however, that practitioners desirous of noting cases of Cholera would have their labour facilitated, if a similar list of symptoms, inquiries, &c., were printed, as is here done, with a letter or number prefixed to each. The letter or number being taken to represent the question or symptom against which it is placed, the observer would then merely have to write on a piece of prepared skin or paper, *e. g.* '2. *anxious*;' '3. *contracted*;' '4. *moist*;' '5. *cold, &c.*;' and on the reverse of the skin, the prescription. Much time would thus be saved at the bed-side, and the case could be written out in full at leisure, or entered upon the larger form of the Society.

"I am, Sir, your obedient servant,

"FRANCIS SEYMOUR HADEN.

"Number of Case—Date—Name and Occupation—Sex—Age—Habits and Previous Health—Residence—Locality—high, low, moist, or dry—Proximity to Rivers, &c.—State of Drainage.

"*A*—Supposed exciting cause of the attack. *B*—Diet within the preceding twenty-four hours. *C*—State or stomach. *D*—State of bowels. *E*—Other ailments. *F*—Medicine already taken.

"CHARACTERISTIC SYMPTOMS. 1. *Hour of first appearance?* 2. *Countenance*—Expression of? 3. State of the Pupils? 4. *Tongue*—appearance and condition of? 5. Temperature of? 6. *Skin*—Generally or locally, appearance of? 7. Condition of (as to secretion)? 8. Temperature of? 9. *Pulse*—Volume and character of? 10. No. of, whether felt at the wrist? 11. In the axilla? 12. In the carotids? 13. *Heart*—Stethoscopic examination of? 14. *Voice*—As to the tone and power? 15. *Respiration*—Frequency of? 16. Free or laborious? 17. Relative duration of inspiration

and expiration? 18. *Breath*—Temperature of? 19. *Vomiting*—Its character and frequency? 20. *Stools*—Their quantity and frequency? 21. Their character, colour, and consistence? 22. *Cramps*—Nature, frequency, and parts affected? 23. *Thirst*—Urgent or tolerable? 24. *Urinary secretion*—State of? 25. *Nervous system*—Affections of? 26. Degree of consciousness? 27. Deafness? 28. Noises in the head? 29. Loss of vision? 30. Convulsions? 31. *Termination of the case*—In gradual or sudden recovery? In consecutive fever, or in death?

"Post-mortem examination—hours after death. *External appearance of the body.* 1. Colour—temperature—rigidity? 2. Any muscular twitching after death? its duration?

"Encephalon. 3. Degree of congestion? 4. Effusion, its nature and seat? 5. Other lesions?

"Thorax. 6. *Pericardium?* 7. *Heart*—Degree of rigidity and flaccidity of each ventricle? 8. Contents of each ventricle as to quantity? 9. Condition of blood as to fluidity and colour? 10. If fluid, does it coagulate on exposure? 11. *Lungs*—General condition and appearance of?

"Abdomen. 12. State of the Peritoneum, and of the abdominal cavity? 13. *Liver*—Condition and appearance of? 14. *Gall Bladder*—Nature and quantity of its contents? 15. *Gall Ducts*—Condition of? 16. *Stomach, duodenum, small intestine, cæcum, colon, and rectum*—Contents of, respectively? Are they acid or alkaline? Condition of the mucous membrane of, respectively (*with regard to appearance and state of glands*)? 17. *Spleen?* 18. *Kidneys?* 19. *Urinary Bladder*—As to contents, and degree of contraction?

"Vascular system. 20. Aorta and venæ cavæ. 21. Pulmonary artery and vein. 22. Femoral artery and vein. 23. Hepatic, gastric, splenic, mesenteric, and renal arteries and veins. 24. General condition of whole vascular system, especially as to congestion, &c.

We have given place to the above documents and remarks, because we feel that the members of our Medical Colleges and Societies require to be stimulated to the *earnest observation of the disease*, and to be reminded of the opportunities now afforded of making good use of their facts.

CRYPTOGAMIC THEORY OF CHOLERA.

Minute Vegetable Parasites have been detected on, and within the tissues of living plants and animals, invertebrate and vertebrate. In many diseases of the human body, they have also been observed, as will be seen by the accompanying table:—

By whom observed.	*In what case.*	*References.*
Bennett, (John Hughes)	Fauns: coating of the tongue; tubercular cavities, and sputa: on gums in typhus fever.	Transactions of Royal Soc. of Edin. vol. xv. part ii. 1842.
Berg	Aphthæ of children.	Müller's Archiv. 1842.
Bohrs	Intestinal discharges of Cholera patients.	Die Kranke Darmschleimhaut des Asiatischen Cholera. 1838.
Busk	Vomited matter (*sarcina* of Good sir).	Microscopical Journal. 1842.
Cowdell	Perspiration of Cholera.	Medical Gazette, Sep. 25, 1841.
Deckner	Senile gangrene.	Annal. Physic. Medic. Wratislav. Tentam. 28, p. 643.
Farre	False membrane expelled from intestine (allied to *Oscillatoria*).	Transactions of Microscop. Society, vol. i. 1841-5.
Fuchs	Crusts of porrigo lupinosa.	Die Krankhaften Veranderungen der Haut. Gottingen; 1840.
Goodsir, (John)	Matters ejected from the stomach (*sarcina ventriculi*).	Edin. Med. and Surg. Journ. April 1842.

Table, continued.

By whom observed.	*In what case.*	*References.*
Gruby	Favus, mentagra, porrigo decalvans (*microsporium Audouini* Gr.), porrigo scutulata; aphthæ, (analogous to *mycotrichium*); and matters ejected in case of obstinate vomiting.	Comptes Rendus, 1841, 42, 43, and 44. Archives Générales, 1842.
Günsburg	Plica Polonica.	Müller's Archiv. 1845.
Hannover.....	Diabetic urine (*Torula cerevisiæ*); mucous membrane in typhoid fever, pneumonia, pleurisy, phthisis, delirium tremens, apoplexy, diabetes, and chronic gastritis.	Müller's Archiv. 1842. Valentin's Repertorium für Anatomie und Physiologie. 1843.
Helmbrecht ..	Posterior chamber of eye.	Casper's Wochenschrift. 1842.
Heusinger	Blistered surfaces.	De generatione mucoris in organismo animali. Jenæ: 1821
Jenner	Cholera evacuations.	London Journ. of Med. Feb. p. 148.
Langenbeck	Œsophagus, and ulcers of intestines, in a case of typhus.	Froriep's Neue Notizen. 1839.
	Various cutaneous eruptions; in a cerebral tumour, in a boy, aged two years.	Sämtlicher Bericht über die 18te. Versammlung der Gesellschaft deutsche Naturforscher und Aerzter zu Erlangen, in Sep. 1840
Lebert	Favus (*Oidium Schœnleinii*); porrigo scutulata (*Achorion Lebertii*); chronic ulcer of leg.	Physiol. pathologi. Paris. 1845, tom. ii. Mém. sur la Teigne.
Mayer	Scrofulous affection of the ear.	Müller's Archiv 1844.
Oesterlen	Aphthæ. (*Mucedo*)	Medicinische Vierteljahrschrift. 1842.
Rayer	Tuberculous patient.	Journal de l'Institut. 1842.
Remak	Tinea favosa (*Achorion Schœnleinii*); porrigo lupinosa; caries of the teeth, and aphthæ; in all fluid dejections, however produced; expectorations in pneumonia.	Medicin. Zeitung. Berlin: 1840. Diagnost. und Pathol. Untersuch. Berlin: 1845.
Robin	Aphthæ; dark brown liquid from stomach of icteric patient, who presented lesions of yellow fever.	Des Végétaux qui croissent sur l'homme et sur les animaux vivants. Paris: 1847.
Schœnlein	Favus; porrigo lupinosa.	Müller's Archiv. 1839.
Simon	Pityriasis versicolor.	De veget. par. Berlin: 1847.
Sluyter.....	Ditto.	Hautkrankheiten. 1843.
Textor	Porrigo favosa; impetigo scrofulosa, etc.	Archives Générales. 1842.
Vogel	Aphthæ, and vomited matters.	Allgemeine Zeitung. 1842.
Wattier	Viscous matter in plica Polonica.	Müller's Archiv. 1841.
Wilkinson	Uterine discharge.	Lancet, Oct. 27, 1849.

Drs. Brittan and Swayne, of Bristol, have recently discovered peculiar microscopic organisms in the evacuations of Cholera patients. Previously to this, the theory of the connection of epidemic disorders with fungi had been proposed by Dr. W. C. Wallace, of New York (in the *Boston Medical and Surgical Journal* for Sept. 5th, 1845); by Dr. Scott Alison (in the *Health of Towns' Journal*); by Dr. Cowdell; and by Professor Mitchell, of Philadelphia.

Dr. Cowdell, in 1848, published a work, entitled "A Disquisition on Pestilential Cholera; being an Attempt to explain its Phenomena, Nature, Causes, Prevention, and Treatment, by reference to an Extrinsic Fungous Origin." At pp. 202 and 203 of this work, the following remarks occur:—"The conclusion at which we have arrived, as to the nature of the cause of

pestilential Cholera is, that it is a minute fungus, probably resembling the *torula cerevisiæ*. We have ascertained that, amongst known agencies that have been suspected of generating this disease, no other could be found which, in its habits, is capable of conforming with the circumstances observed in the origin, diffusion, and morbid phenomena of the disorder; no other could exhibit those astonishing habits of uniformity, under the utmost variety of circumstances, witnessed in Cholera. The fungus, as it exists in the blood, most likely does not resemble that which produced its germs. Our opinion is, that the germs of a fungus are absorbed through the lungs into the blood of bio-chemically (electrically) predisposed persons; that a process of germination, and consequent catalytic fermentation, is immediately established; the composition of the blood instantly begins to undergo a change; the heart is less stimulated by blood, insufficiently oxygenated; and nutrition (and, consequently, the extrication of animal heat) is checked, through the capillary circulation; and coldness and lividity are thus produced. . . . An effort appears to be made in the constitution to rid itself of the morbific agent by directing it, as is usual in diseases, and also in the discharge of medicinal substances, to some excreting surface. In this case, the mucous surface of the alimentary canal, by profuse discharges, endeavours to expel the morbid matter which has been directed to its surface. It is here, on the mucous membrane, that there appears to be formed, in an early stage, (the cases seldom being sufficiently protracted for a more mature development), a nidus for the growth of fungi. This consists of the protein deposit, of the nature of which pathologists are not agreed, found in the alimentary canal, and which appears to resemble the albuminous crusts, which are the nidus of the fungus of aphthæ."

Professor J. K. Mitchell, of Philadelphia, in his work on the Cryptogamous Origin of Malarious and Epidemic Fevers, published during the present year, observes:—"The cryptogamous theory will well explain the peculiar domestication of different diseases in different regions, which have a similar climate—the Plague of Egypt, the Yellow Fever of the Antilles, and the Cholera of India. It accounts, too, for their occasional expansion into unaccustomed places, and their retreat back to their original haunts. Our hypothesis will also enable us to tell, why malarious sickness is disproportionate to the character of the seasons; why it infests some tropical countries, and spares others."

He subsequently refers to the animalcular hypothesis as incapable of accounting for the occurrence of Cholera, in the winter, in Russia:—"But if we assume for Cholera a fungous origin, all difficulties vanish; and, as in the case of yellow fever, an easy explanation may be given of every apparent incongruity. We have only to suppose, what is known to happen in other cases, that the fungi, on which Cholera is assumed to depend, acquire, at times, as do the germs of some contagious diseases, an unusual power of reproduction and diffusion, and a greater potency of expansion. Such germs may be carried by men, and goods, and ships; or may make a slower progress by their own unaided activity; or be scattered by the winds, to regerminate wherever special conditions are found. Thus can we see why the poison prefers the route of streams, or infects the damp parts of cities; and why classes living in clean apartments, in dry districts, suffer so little."

Dr. Scott Alison, in some papers to which we formerly alluded (Jan. p. 72), has the following suggestive remarks:—"The exciting cause of Cholera appears to be some special agent. There is much evidence to countenance the supposition that it is diffused in the atmosphere; but there is some reason to think that it may be present also in surface water, and in the animal and vegetable food which we consume. Moreover, it is not unreasonable to conjecture that the human body itself may be its primary abode,—may, in short, be the very laboratory, or nidus, in which it is produced. What the nature of this implied agent is, it is difficult satisfactorily to say. *It may be an or-*

ganic body of vegetable or animal origin; it may be a low form of animal or vegetable life; or it may be a simply inorganic miasma arising from the soil, or the animal and vegetable matters covering its surface. Once received into the blood, it seems to seek the stomach and bowels as mercury seeks the liver, or turpentine the kidney."

Dr. SWAYNE's account of the interesting discovery made by himself and Dr. Brittan, was published in the *Lancet* for October 6, 1849:—"In July last, sub-committees were formed by the Bristol Medico-Chirurgical Society, for the purpose of examining microscopically and chemically the discharges of Cholera. The microscopical sub-committee consisted of Drs. Bernard, Budd, Swayne, Neild, Brittan, and Prichard. At one of its first meetings, Dr. Brittan and myself undertook, at the request of the other members, to examine microscopically, and take drawing of, specimens of "rice-water" evacuations, which Dr. Budd had obtained from two patients in the Cholera hospital. This examination was accordingly conducted by both of us, independently of each other; and the result, consisting of drawings and specimens, was exhibited at the next meeting. Both our drawings and specimens showed certain bodies, in considerable abundance, and so singular in appearance, that we expressed our opinion, that they were characteristic of the evacuations of Cholera, if not the very agents causing the disease. In this opinion, the other members coincided. These specimens and drawings were subsequently exhibited at the next meeting of the Medico-Chirurgical Society, on July 14th.

"From that time, we both continued our examinations of the evacuations of Cholera, with a view of confirming the result of our first observations. We were enabled to procure specimens from more than fifty different patients in the Cholera hospital. These were all examined, at various times, by Dr. Brittan and myself; and the result has been, to confirm the opinion, first expressed, as to the importance of the peculiar bodies above mentioned in relation to Cholera. Although agreeing in their result, our investigations have been carried on, from first to last, quite separately and distinctly. Whilst thus engaged in searching for these bodies in the evacuations, Dr. Brittan made the important discovery that they were present also in the atmosphere of an infected locality; and, still more recently, Dr. Budd succeeded in detecting them in the water of several districts where Cholera had prevailed. Both of these observations tend still more to show the important part, which these bodies probably take in the production of the disease.

"Cholera evacuation chiefly differs from healthy fæcal matter in the following points:—1. The great bulk of the evacuation consists of a thin serous fluid, in which are floating a large quantity of mucous globules, mixed with a hyaline basis. 2. It contains little or none of the amorphous matter tinged with bile. 3. It contains the same *débris* of animal and vegetable matters from the food, but in less quantity. 4. It contains much less epithelium than healthy fæcal matter. 5. It often presents a large number of crystals, which form the ordinary constituents of urinary deposits, especially triple phosphate, and lithate of ammonia; more rarely, lithic acid and oxalate of lime. It contains little or no chloride of sodium. 6. The most important difference is, that it presents those cells to which I have so often alluded, and which I have never detected in healthy evacuations. The same result has attended Dr. Brittan's observations.

"Now, the first three peculiarities of choleraic evacuations which I have mentioned, are what any one who was at all familiar with their appearance would naturally expect.

"The fourth peculiarity, however, directly contradicts a theory which was at one time proposed—viz., that the drain from the mucous membrane of the bowels arose in consequence of its being denuded of its epithelium. It is true, that large quantities of epithelium have been found in the contents of the intestines of persons who have died of Cholera; but this has been satisfactorily proved to be a consequence of maceration after death.

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PLATE 1

FUNGI DESCRIBED BY Drs SWAYNE & BRITTAN.

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"The fifth peculiarity is somewhat remarkable, when we consider how completely the urinary secretion is suspended in bad cases of Cholera. The urinary salts occur so constantly, and in such large quantities, in the evacuations of Cholera, that it is impossible to account for them by supposing them to arise from an accidental admixture of urine, even if that secretion took place. Large and beautiful crystals of triple phosphate (Plate I, 4) may be constantly seen in choleraic evacuations, and are often in considerable abundance. These are present, also, in healthy fæcal matter, but are seldom or never plentiful. This, however, is not the case with urate of ammonia, which is occasionally present, in very great abundance, in choleraic evacuations. It may be either in an amorphous form, or in dark-yellow, semi-opaque globules, the smaller ones often cohering together in pairs. (Plate I, 2) Sometimes it is present in such quantity as to tinge the evacuation of a reddish colour. Lithic acid is occasionally, but more rarely present, and is never in any quantity. Sometimes lithic acid is combined with lithate of ammonia, in the mode represented by Dr. Golding Bird, in his book on urinary deposits. (Plate I, 2.) Oxalate of lime, in its dumb-bell form, is not uncommon, and is sometimes very plentiful. (Plate I, 3.) Although chloride of sodium is so constant in healthy evacuations, yet it is nearly always absent in those of Cholera. In one case, however, I met with it in large quantities. (Plate I, 5.) Cholera evacuations often contain large quantities of black amorphous matter, which I believe to be calomel, as it is always most plentiful in those who have been treated with large doses of that medicine, and is rendered darker by lime-water.

"I now come to the last and most important peculiarity—viz., the presence of those peculiar cells which we have so constantly found. I have found them absent entirely in only four out of thirty-four cases; and the proportion in which Dr. Brittan has failed to detect them is still smaller. Three of the cases in which I failed to see them were unusually severe and rapidly fatal; but I do not think that this invalidates our conclusion, as I was only able to obtain one specimen of fluid from each of these, the evacuations mostly running from them through the bedding. Both Dr. Brittan and myself have occasionally failed in obtaining them in one motion (usually the first); but on examining others from the same patient, we have succeeded in finding large quantities of them. It seems sometimes, especially in the worst cases, as if there were not sufficient power in the system to expel these bodies from the intestines. The evacuations in such cases are very thin, clear, and transparent, or semi-gelatinous, but without any well-marked flocculent deposit. In the majority of rice-water evacuations, this flocculent deposit is very marked, and the floccu.: contain a good deal of yellowish-white, semi-opaque matter. This is the peculiar appearance which these bodies present to the eye when clustered together in large numbers. In one case, from a convalescent patient, a tolerably thick bilious evacuation was studded upon its surface with yellowish-white bran-like scales. On examining these under the microscope, I found them to consist almost entirely of these bodies, many of which were of very large dimensions, so as to occupy nearly half the field when viewed under an eighth-of-an-inch magnifier. The flocculent deposit sometimes almost entirely consists of myriads of these bodies, of all sizes.

"These cells, which I must now describe, vary very much in size and apparent structure during the different stages of their development. The smallest are of the same size as, or even much less than, blood-globules; so that, to show them properly, an object-glass of high magnifying power, such as one-eighth, one-twelfth, or one-sixteenth of an inch is required. They are very transparent, and, like blood-discs, appear to be flattened cells; but the thickness of their walls causes them to resemble rings in appearance. Their interior is almost entirely destitute of granules. Their walls refract light powerfully; they sometimes present a clotted or even cellular appearance, and there is usually a transverse fissure or crack at some point of their circumference. In some of them, I have observed very minute cells or buds, pro-

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PLATE 1.

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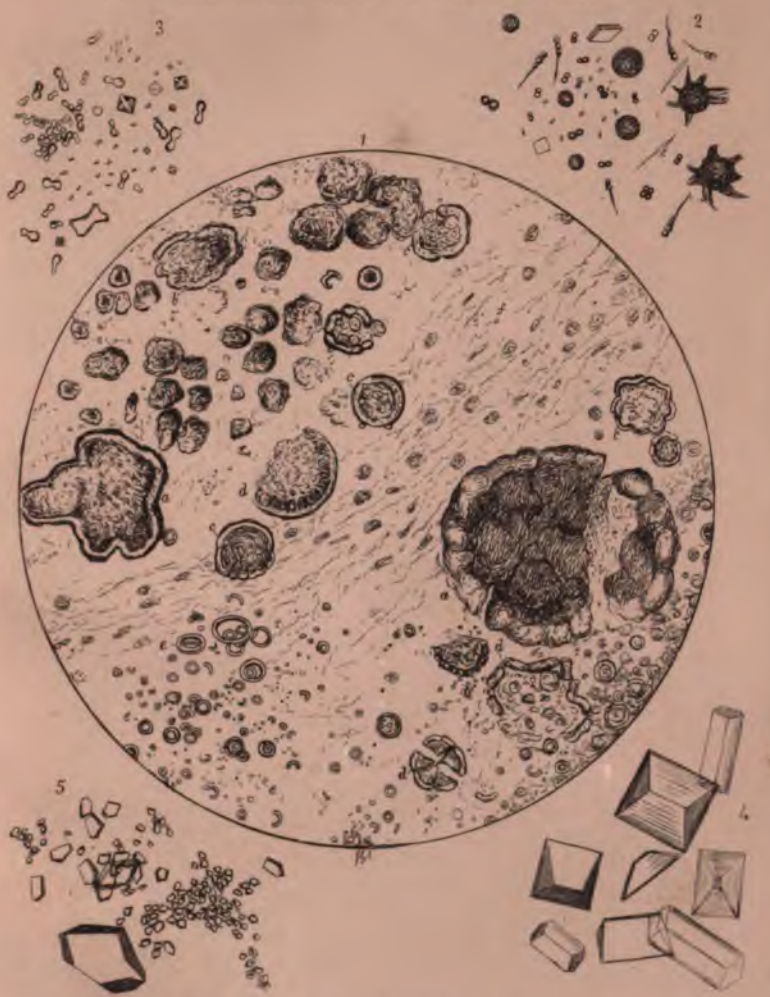

PLATE 2

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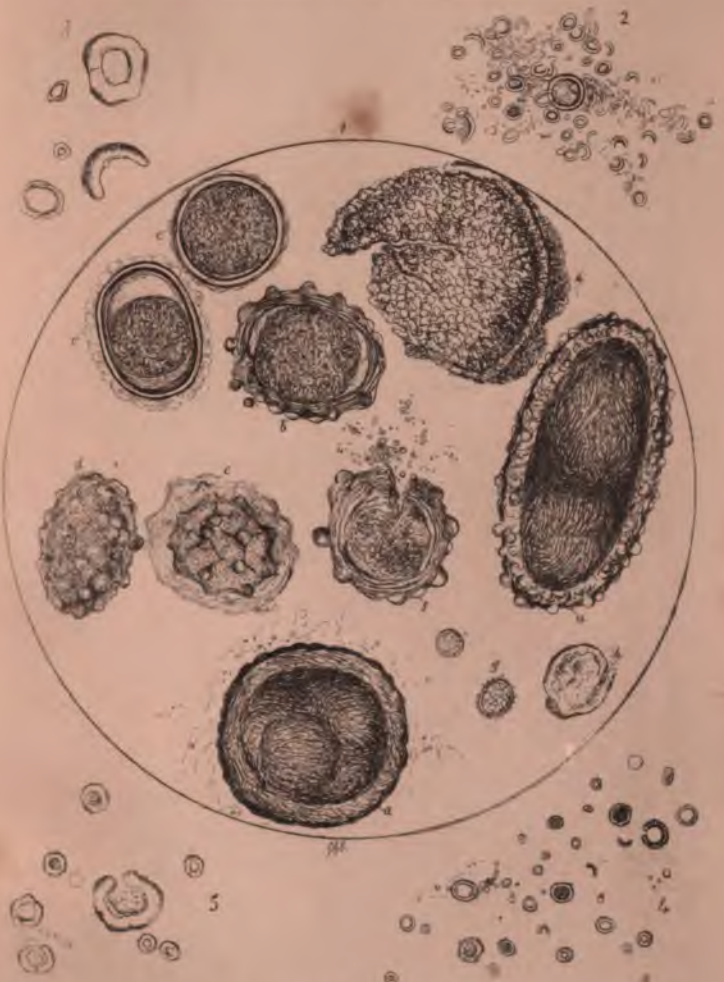

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jecting at different points of their circumference. (Plate II, 1, g.) Fragments of them present the appearance of small segments of circles. Cells of such dimensions are most usually found in the first portions of the alimentary canal, especially in the matters ejected by vomiting. I have, however, found them present in large numbers in the fæces, together with other Cholera cells of much larger size. These small cells precisely resemble, and are, in fact, identical in appearance with, those which Dr. Britton has discovered in the atmosphere.

"The medium and large-sized cells (as usually found in cholera evacuations) distinctly resemble the small cells in appearance, but they are coarser and more granular in structure. Between the three, every gradation may be met with, both as to form and size. The medium cells (Plate I, 1, c), appear like thick, but somewhat irregular rings; but, on altering the focus of the microscope, they can be observed to be flattened cells, with granular contents, and in some cases containing distinct cells within them. Their walls appear thick, and cellular in structure, the arrangement of the cells sometimes giving them the appearance of transverse striæ. The walls have usually a great tendency to split at four or five points of their circumference; and, when split by gentle pressure, the whole cell divides into four or five fragments, and gives exit to its granular contents. (Plate I, 1, d.)

"The larger cells (as usually met with) are more irregular in shape, and cellular in structure (Plate I, 1, a). They are semi-opaque, of a dirty-yellow colour, and have lost much of their resemblance to rings. On bringing their surface into focus, three or four circles can usually be seen upon it, which appear deep fissures when viewed in profile. The cell-wall is distinctly cellular in structure. The cell often contains within it other cells of a similar nature. When one of these large cells is crushed by pressure, it breaks into a great number of fragments, of a round cellular form, (Plate I, 1, b.) Sometimes, however, the fragments have an angular character.

"Such are the usual appearances of these cells in the evacuations of Cholera; for in by far the greater number of cases they appear flattened, broken, and imperfect. They are collapsed, as if by exosmosis, and more or less disintegrated. It is very probable that this appearance is produced by their having undergone a kind of digestion, whilst passing through the alimentary canal.

"A very short time ago, I had an opportunity of examining the only perfect specimen of these cells which I have seen. In one of my earlier examinations I met with a large, well-developed cell, (Plate II, 1, a,) but this did not perfectly reveal the structure, and it is only lately that I have seen any which do this. Their walls were thick, and studded externally with numerous cells or buds. (Plate II, 1, b.) These appeared to be arranged in concentric circles. The cells being somewhat globular, the centre is first brought into focus, when it is seen to be occupied by two or three of these buds, with intervals between them, (Plate II, 1, c.) On gradually bringing the rest of the cell into focus, wider and wider circles of these buds are successively displayed, (Plate II, 1, d,) until the outer margin or ring of buds is brought into focus. The cells forming these circles are connected by very distinct concentric lines.

"The parent cell is seen to contain within it a mass of granules, which, in imperfectly developed cells, does not quite fill its interior. (Plate II, 1, e.) On crushing one of the parent cells, it gives exit to its contents, consisting of granular matter, somewhat resembling the most minute Cholera cells in appearance. (Plate II, 1, f.) Well-developed large cells of this kind are usually tolerably transparent, and of a dirty-yellow colour.

"I may mention, in conclusion, that the cells which Dr. W. Budd has detected in the water of Cholera districts, are usually of the large kind, and more disintegrated and imperfect than those which are generally found in the evacuations. They have in all probability escaped from sewers into the drinking-water, and there undergone a kind of maceration.

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"The parent cell is seen to contain within it a mass of granules, which, in imperfectly developed cells, does not quite fill its interior, (Plate II, 1, *e*.) On crushing one of the parent cells, it gives exit to its contents, consisting of granular matter, somewhat resembling the most minute Cholera cells in appearance. (Plate II, 1, *f*.) Well-developed large cells of this kind are usually tolerably transparent, and of a dirty-yellow colour.

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"It may be added, in support of our conclusions, that Dr. Brittan and myself have both examined the evacuations in cases of diarrhœa, which are clearly not traceable to the prevalent epidemic, and have invariably failed in detecting anything like Cholera cells. I have examined two very well marked cases, in which the evacuations were more fluid than those of Cholera. One occurred in an old man, suffering from chronic disease of the rectum; the other in a lady, during an attack of uterine phlebitis after delivery. In neither case was a trace of these bodies to be found.

"In the present state of the inquiry respecting the cause of Cholera, when so much remains to be done, it is almost useless to enter deeply into speculations with regard to its mode of propagating and of producing its effects. It seems very probable, however, from what we have seen of their development, that the Cholera cells have their habitat entirely in the alimentary canal, and do not enter the blood. They are most likely inhaled from the air, and swallowed with the saliva, or taken in with articles of food or water. When received into a healthy stomach, the converting power of which is strong, they perhaps undergo a kind of digestion, and are completely dissolved. But let the vital powers of that stomach be lowered by any depressing agent, such as insufficient food or clothing, fatigue, intemperance, fear, or miasmata of different kinds, and these bodies will acquire a rapid and prolific development, and produce, by the irritation of their presence, those copious discharges of serum and mucus which are so characteristic of the disease. In smaller quantities, they in all probability produce that diarrhœa which is so common at the time when Cholera prevails, and which seems to be only a modification of the same disease."

Dr. Brittan published an account of his observations in the *Medical Gazette* for September 28, 1849. In addition to adducing facts similar to those detailed by Dr. Swayne, he says: "Having been led to consider these bodies (which, from the characteristic of their appearance, I have named annular bodies) in some manner essentially connected with Cholera, I wished to ascertain whether it might be as cause and agent, or effect and product; that it could not be the latter, seemed evident at once, from the fact that they were unlike any of the known healthy or morbid elements of the body or secretions; and, as they were found in the vomited matters apparently in an early stage of development, it seemed probable that they were introduced from without, and would be met with in the atmosphere, etc., of places where Cholera was rife. Accordingly, with the view to test the truth of this supposition, on July 19, with the kind assistance of, and an apparatus suggested by, Dr. Bernard, I condensed about ʒi of fluid from the atmosphere of a room in a house from which five patients had been removed, the day previous, to the Cholera hospital, and I found in it bodies" similar to those seen in ejected matters. "I soon after repeated the experiment, with the aid of Mr. Ralph Bernard, in a cell in the Bridewell, which had been unoccupied for some time, but adjoining cells the occupants of some of which had been seized with Cholera, one of whom died the day before. Here, also, the same result was obtained. The same experiment was then tried in situations free from Cholera, but with a negative result; the fluid here obtained was destitute of these bodies, and contained only small portions of hyaline, structureless matter, also observable in the first. I have since repeated these experiments, aided by Dr. William Budd, several times, with the same positive and negative results, and therefore feel justified in stating that the same will follow similar investigations made elsewhere, if the necessary care be taken, and a glass of sufficiently high power (I used a Ross's 1-12) be employed. The only question remaining is, as to the identity of the annular bodies thus shown to exist in the atmosphere of Cholera districts, and in the vomited matters and evacuations of Cholera patients. Most of those to whom I have shown the specimens entertain no doubt on the subject, and all seem to concur in their identity of form."

Mr. Quekett, of the Royal College of Surgeons, has expressed his belief in the fungoid nature of the bodies described.

Dr. W. Budd, in a letter published in the *Times* some days previously to the appearance of the papers by Drs. Swayne and Brittan, stated that he had found similar bodies in the water of the districts in which Cholera prevailed. The Bristol observations have created great interest, and some have even rashly concluded that the bodies seen by Drs. Swayne and Brittan are the *fons et origo mali*. Many, however, of acknowledged reputation as microscopic observers, have either failed to detect the universal connection of the organisms above described with Cholera, or seem to have positively shown that they have no reference to the disease. At the meeting of the Microscopical Society, on October 17th, Mr. Busk "demonstrated that the large bodies figured by Mr. Swayne are nothing else than a species of *uredo*, a kind of smut frequently found on wheat, and specimens of which Mr. Busk found in a loaf of brown bread purchased at Greenwich. The uredo is not destroyed even by caustic potash, and it readily passes, unaltered, through the intestinal tract. The smaller, so called annular bodies, are not, according to Mr. Busk, sporules in an earlier stage of development than the larger bodies (uredo), but are evidently starchy granules derived from the bread eaten by the patients. In addition to the uredo and the starchy granules, Mr. Busk demonstrated, in a specimen of Cholera evacuation supplied by Dr. Swayne, the cellular structure of the inner coat of the bran of wheat."—(*Medical Gazette*, October 19th.)

While we cannot at once recognize the so-called cholera-cells as the cause of Cholera, we think there are many facts which tend to establish the probability of this and other diseases being either caused by, or intimately connected with, the dissemination of fungi; but of what form these organisms are, we are not yet in a state to determine. An immense number of observations must be made, in all possible varieties of place and circumstance, before any trustworthy result can be arrived at. Several forms of microscopic organisms (not merely different stages of development) have been discovered in the intestinal and renal evacuations of Cholera. Which of these —IF ANY—is the true *Cholera fungus?* Time and experience can alone decide. We look to Drs. Swayne and Brittan for further elucidations.

EXPLANATION OF PLATE I. (MAGNIFIED 420 DIAMETERS.)

1. Large and small cells from same specimen of evacuation.
   a. Large cell, as usually seen in Cholera evacuation, being broken, or more or less imperfect.
   b. Fragments of do. ruptured by pressure.
   c. Medium sized cells.
   d. Ditto, ruptured by pressure.
   e. Small cells.
   f. Mucus, with hyaline basis.
2. Lithic acid and lithate of ammonia, from Cholera evacuation.
3. Oxalate of lime from ditto.
4. Phosphates from ditto.
5. Chloride of sodium (?) from ditto.

Etched by Dr. Swayne, from drawings taken by him from nature, to illustrate his cases.

EXPLANATION OF PLATE II. (MAGNIFIED 420 DIAMETERS.)

1. Large well-developed cells.
   a. Large cells.
   b. Large cells, showing a bud completely detached.
   c. Ditto, the centre only in focus, so as to show the buds on its surface.
   d. Another cell from same specimen, showing the buds on the surface.
   e. Cells from same specimen, not completely developed.
   f. Large cell ruptured, and giving exit to its contents.
   g. Small cell, showing a development of buds externally.
   h. Broken and imperfect cells from same specimen. Etched by Dr. Swayne, from nature.
2. Small cells from the atmosphere. Etched by Dr. S. from Dr. Brittan's drawing.
3. Imperfect cells from water. Etched by Dr. S. from an engraving in Dr. Budd's pamphlet.
4. Small cells from vomited matter. Etched by Dr. S. from a drawing taken by him from nature.
5. Cells from water. Etched by Dr. S. from an engraving in Dr. Budd's pamphlet.

M. BECQUEREL'S ANALYSES OF THE BLOOD, MATTERS VOMITED, ALVINE EVACUATIONS, AND URINE, OF CHOLERA PATIENTS.

When M. BECQUEREL's paper was in type (*Archives Gén. de Médecine*, October 1849), the author had not seen the valuable memoirs, by Drs. Parkes and Garrod, contained in the LONDON JOURNAL OF MEDICINE for February and May 1849; but the Editor has appended a short acount of them. In France it is less the custom, than in this country, to look into the literature of a subject before publishing on it; and a knowledge of English memoirs, in the original, is rare.

M. BECQUEREL examined the matters vomited in six cases; the dejections in four cases; and the blood in five cases. The results are given in the following tables:—

TABLE I.—SIX ANALYSES OF MATTERS VOMITED.

CASES.	Reaction.	Sp. gravity.	Water.	Solid matter in 1000 grs. filtered fluid.	Albumen in same.	Chloride of Sodium.	Matters not passed Filter.
1. F. æt. 30. Vomited 50 hours after attack ..	Neutral.	Not taken.	991·52	6·37	Not weighable.	2·35	2·11
2. M. æt. 23. Cholera of 8 hours duration in midst of it vomited ..	Acid.	1000·03	991·02	7·01	Not weighable.	3·08	1·04
3. M. æt. 50. Cholera of 12 or 15 hours. Commencement of reaction ..	Neutral.	1012·20	967·18	26·31	5·41	4·00	0·21
4. F. æt. 42. Cholera of 4 days, but vomiting 98 during only 48 hours ..	Acid.	1015·53	960·20	37·03	18·40	8·24	7·47
5. F. æt. 42. Vomited 3 hours before death ..	Acid.	1017·20	954·42	26·68	7·25	5·25	8·90
6. F. æt. 28. Cholera for 8 hours ..	Acid.	1027·40	931·46	54·70	31·50	6·75	11·24

TABLE II.—FOUR ANALYSES OF THE DEJECTIONS.

CASES.	Reaction.	Sp. gravity.	Water.	Solid matter in 1000 grs. filtered fluid.	Albumen in same.	Chloride of Sodium.	Matters not Passed Filter.
1. F. æt. 30. Cholera at 50 hrs. (Had vomiting)	Alkaline.	1004·20	988·60	8·64	Not weighable.	3·7	2·76
2. M. æt. 44. In blue stage ..	Ditto.	1007·49	970·57	19·29	Ditto.	Not taken separately.	7·14 (with chlor. sod.
3. M. æt. 35. Cholera of 18 hours duration ..	Ditto.	1009·70	781·87	14·54	3·22	5·24	3·59
4. F. æt. 29. Cholera of 18 hours duration ..	Ditto.	1071·04	982·83	15·12	4·51	7·81	2·05

TABLE III.—FOUR ANALYSES OF THE SERUM OF THE BLOOD.

CASES.	Sp. gravity.	Water.	Solid Matter.	Pure Albumen.	Chloride of Sodium.	Fatty Matters.	Salts and Extractive Matters.
1. M. æt. 29. Bled at the beg. of typhoid stage ..	1041·50	888·30	111·70	63·10	12·20	2·70	31·70
2. M. æt. 26. Bled during reaction ..	1035·10	901·79	98·21	48·21	7·38	4·23	38·48
3. M. æt. 39. Bled on the morning of death for cerebral congestion ..	1034·20	893·70	106·30	64·20	8·82	Not sep.	32·68
4. M. æt. 35. Bled seven hours before death for *cerebral congestion* ..	1035·10	886·60	113·40	88·66	Not sep.	Not sep.	28·74

TABLE IV.—TWO ANALYSES OF BLOOD.

CASES.	Specific Gravity.	Solid Matter.	Globules.	Fibrin.	Pure Albumen.	Chloride of Sodium.	Salts and Extractive Matters.	Water.
1. M. æt. 30. Bled on the morning of his death.	1074·10	277·48	189·60	1·88	51·80	6 01	27·59	782·52
2. M. æt. 35. Bled on the morning of his death.	1076·00	244·05	160·20	6·50	60·35	Not sep.	20 00	753 95

First Table. The matters vomited were, in the six cases, whitish, resembling rice-water, and in all respects characteristic of Cholera. When filtered, they were separated into a solid residue left on the paper, and a perfectly transparent liquid, which passed through with very great ease. The former was composed almost entirely of coagulated albumen, having, however, attached to the fragments, some minute traces of mucus. The albuminous nature of the insoluble fragments was demonstrated in ways such as could admit of no doubt of their accuracy, both chemically and microscopically.[1] The solid matter, after having been washed several times in distilled water and alcohol, was dried and weighed. The quantity bore a relation, as Table I shows, to the quantity of matters held in solution by the filtered liquid. Another result is apparent, though less precise. It is this: that the quantity of solid matter detained on the filter, and kept in solution by the liquid which passed through, was found to have diminished, as a longer time had elapsed from the seizure. In 1000 parts of the liquid, the coagulated albumen varied from 1·94 gr. to 11·24 gr. The quantity of chloride of sodium, found in the matters vomited, was very great in proportion to the total quantity of matters in solution: it varied from 2·35 gr. to 8·24 gr. Compared with the amount of this salt which normally exists in the serum of the blood, there was found nearly three times less. It is necessary to make this comparison, because the quantity of water, both in the vomitings and in the stools, varied greatly, and bore a proportion to the quantity of drink given to the patients. [The only drinks were ice and Seltzer water.] As a summary of the six analyses, M. Becquerel considers the ejected liquid to be the serum of the blood diluted by a variable quantity of water, and containing fragments of albumen floating in it, (with a little mucus attached,) and a large relative quantity of chloride of sodium.

Second Table. The four dejections filtered easily, and left an insoluble matter on the filter, perfectly analogous to the insoluble matter of the vomitings. Indeed, a glance at Tables I and II will show an identity of characters in the matters vomited and passed by stool; with this difference, that the dejections were alkaline, from the presence of a small quantity of ammoniacal salts.

Third Table. In three cases in which the blood was drawn during advanced reaction, coagulation took place: in the other, this process was hardly discernible. The density of the serum was in all the cases above the natural standard; the solid matters being in increased, and the water in diminished quantity. The chloride of sodium was nearly one-third above its normal amount. The figures range from 7·38 gr. to 12·2 gr., in place of from 5 to 6 gr. The fatty matters were more than double: and the proportion of extractive matter was enormous.

Fourth Table. The blood flowed with difficulty. The beating required to be long continued to obtain the fibrin; which was in small proportion in

[1] The methods ought to have been fully detailed: as the chemical nature of the substance is still in dispute, and it is not to be settled by *opinions*, or a narrative of *results*

one case. The difference between the amount of fibrin in the two cases cannot be explained. The large proportion of globules in both cases is striking.

Remarks on the Facts contained above. M. Becquerel considers, that in Cholera, it is undeniable that a certain quantity of the serum and solid constituents of the blood, especially of the albumen, is exhaled through the mucous membranes. The presence of *coagulated* albumen is probably the result of diminished alkalinity in some dejections, and the neutral or acid reaction of others. The cause of the abundance of chloride of sodium cannot be explained. There is less water in the blood, on account of the quantity thrown off from the intestines; and this occasions a relative concentration of the globules, of the chloride of sodium, of the salts, and extractive matters. The notable diminution in the albumen of the serum, is explained by its presence in the intestinal discharges. The almost triple amount of fatty matters must be attributed to the rapid waste or absorption of fat, which takes place in Cholera.

The Urine. Six cases are thus briefly given.

Case I. A man, (hospital patient,) was seized all at once with the severe symptoms of Cholera, and died in twenty-four hours. No urine was passed, and none could be obtained by the catheter.

Case II. A young man, aged 17, was treated at home by M. Becquerel, and died on the fifth day. On the two first days he was catheterized, but no urine was obtained. On the third, fourth, and fifth days, he passed urine spontaneously; and on none of the days did it contain any trace of albumen.

Case III. A young man died in hospital, on the sixth day, in a typhoid state. On the first day, no urine was obtained by the catheter; on the second and third, a little was got; and on the fourth, fifth, and sixth, he passed urine spontaneously. In the urine of none of the days was it possible to detect any trace of albumen.

Case IV. A patient, labouring under disease of the heart, was attacked by Cholera in a mild form, and without suppression of urine, which was never found to be albuminous.

Case V. A man came into hospital with intermittent fever, was seized with malignant (*foudroyant*) Cholera, and died in twenty-four hours. Half a teaspoonful of urine was got by the catheter. It did contain albumen, but in so small a quantity as to make its presence almost matter of doubt.

Case VI. A patient was brought into hospital eight or ten hours after seizure. By the catheter, urine was obtained on the first, second, and third days: it was small in quantity, turbid, acid, and contained a very notable quantity of albumen. On the fourth and fifth days he passed a little water spontaneously, which was nearly devoid of albumen. He was now well: and on the sixth day there was no trace of albumen in his urine.

From these cases M. Becquerel concludes:

1. That in a considerable number of cases, it is impossible to obtain urine from Cholera patients.
2. That in cases of great and of medium intensity, the urine may contain no trace of albumen.
3. That in certain cases, from the return of the secretion up to convalescence, it is persistently albuminous.

M. Becquerel's negative observations on the urine are of importance, as they are quite sufficient to render the presence of albumen in it, by no means a diagnostic sign, as to any case of serous purging being, or not being, Cholera. It is within our own knowledge that many others, besides M. Becquerel, have in vain searched for albumen in the urine of Cholera patients. As we know that albumen does not, in any disease, appear in the urine unless the kidneys are congested, the presence of albuminous urine in Cholera is, evidently though a common, only a contingent symptom.

The exhalation of albumen from the gorged capillaries of the intestines is a more important and characteristic phenomenon. The observations of M. Becquerel tend to strengthen the opinion that the "rice-water" fluids, vomited and passed by stool, are alike hæmorrhage. This fact ought never to be lost sight of in the treatment. By bearing it in mind, a physician apt in his resources, will save more patients than could be rescued by any specific.

FUNGI IN CHOLERA URINE.

Various observers have recently noticed fungi in the urine of Cholera patients. They have been seen among others by DR. R. QUAIN, (*Lancet*, Oct. 27th, p. 462); DR. W. HERAPATH, of Bristol, (ib. 463); DRS. CORMACK and HENRY, (Westminster Society Reports, p. 1076 of this number;) and by MR. JOHN GROVE, (*Lancet*, Oct. 20th,) who attaches great importance to them, as bearing upon the fungous theory of the disease. It must first be shown that the plant is special to Cholera, before Mr. Grove's theoretical views can be entertained. In the meantime we must say, that Mr. Grove deserves much praise for the zeal with which he is prosecuting the inquiry. The determination of the exact species to which these urinary fungi belong, does not seem at present to be of much importance with reference to Cholera, as DR. W. T. GAIRDNER, of Edinburgh, (*Medical Times*, 27th Oct.), has clearly shown. The most common fungus we believe to be a species of torula: and if so, the fact is interesting. Perhaps, in Cholera, as in some other diseases, sugar is formed before the normal bio-chemical changes are fairly re-established. What is called *Diabetes* is not the only affection in which the urine is saccharine.

SURGERY.

CASE OF TRANSFUSION OF BLOOD.

The *Revue Médico-Chirurgicale de Paris* for August, 1849, has extracted from the *Journal de Médecine de Bruxelles* an account of a case in which the operation of transfusion of blood was performed by M. BOUGARD. The apparatus used was a modification of Blundell's, consisting of an elastic stem, about 50 centimètres in length, furnished at one extremity with a reservoir and stop-cock; the reservoir having a triangular base, so as to prevent rotation of the blood; the other extremity is provided with a simple canula, made so as to exactly fit a small tube of about an inch long, which is previously introduced into the vein.

CASE. A woman, aged 28, of lymphatic constitution, was attacked in 1843 with hæmoptysis, for which she was very largely bled; after this she was subject to hæmorrhages from the mucous membranes. The blood had exuded by turns from the ears, nostrils, mucous membrane of the eyelids, of the lungs, intestines, genito-urinary passages, and even the skin; in short, the anæmia had become so intense, that the patient could not be moved from bed without the occurrence of syncope. All treatment having failed, transfusion appeared the only remedy, and was performed, on 30th September, 1847, by MM. A. Uytterhoeven and Bougard. The latter gives the following account of the operation:—

The patient being placed on her back on a hard mattress, and the right arm being drawn from the trunk and placed on the bed, with its anterior surface upwards, I exposed the cephalic vein, for 6 or 8 lines just above the bend of the elbow, by means of a bistoury; I then opened it with a lancet, taking care to prevent the escape of blood; I then took the canula, which

[a] Vide Reports of Westminster Society, p. 1076, and 1082.

had been plunged in luke-warm water, and, placing my thumb on its orifice, so as to retain the liquid in it, I introduced it into the vein. It was held in with the thumb of the left hand, so as to prevent also the escape of the water which it contained. In the meantime an assistant had prepared the apparatus, by forcing a current of hot water through it, surrounding it with compresses, and then plunging it in hot water, so as to maintain a proper temperature. Another assistant opened the vein of a healthy young woman, of a sanguine temperament, aged 22 years; the blood was received into the reservoir. The stop-cock being closed, the blood accumulated in the recipient; when it had reached about two ounces, (this precaution is necessary to avoid the introduction of air, and the interruption of the stream of blood during the injection,) I opened the stop-cock, and, when the blood appeared at the lower end of the tube, I introduced the tube into the canula which had been placed in the vein. The blood thus passed directly from the veins of the healthy person to the patient. Two and a half ounces of blood were introduced. The operation was commenced at 6 minutes before 4, and ended at 4 o'clock precisely.

"Before the operation, the pulse had been usually 108; when the operation was commenced, it was 120; and after its conclusion, 100. My colleagues, who had their fingers placed on an artery, observed the pulse become slower as the blood entered the vein. At 45 minutes after 4, the pulse was 96; and at 9 o'clock the next morning, it was 88. During and immediately after the operation the patient said that *she felt a hot liquid running through her body, and especially towards the heart; also unusual heat.* She was ordered to rest, and attentively watched. Up to the 6th of October the state of the patient continued steadily to improve. She slept and eat well, and could raise herself in bed. She still had some hæmorrhage: the pulse varied from 80 to 88. On the 2nd, some iron pills were ordered. On the 6th, she expressed a wish to have the operation again performed. This was complied with, as the quantity injected the first time seemed scarcely sufficient to effect a cure, and the operation was performed on the 7th.

"On the former occasion, I exposed the vein extensively; and its opening, and the introduction of the canula were easily and rapidly effected. This time, I wished to arrive at the same result by means of a small incision of about three lines; but when the vein was opened, it was impossible for me to introduce the canula, so that I was obliged to enlarge the incision. This caused a delay of ten minutes; the patient lost some blood, and had a fainting fit, which lasted some minutes. The apparatus having been adjusted, three and a half ounces were injected, when the current stopped, from the stream from the vein being flattened, and part of the blood being coagulated in the narrowest part of the canula. I had intended to introduce four or five ounces. The diminution in frequency of the pulse was not so well marked as at the former operation, but the sensation of internal heat seemed more intense. The arterial pulsations were stronger than before the operation. The patient was much agitated the remainder of the day and the following night." She went on well for some time, menstruating healthily from the 17th to the 21st of October, and regaining her strength so much, as to be able to get up and assist the nurse in her ward. On the 15th of November, however, an excessive and obstinate metrorrhagia set in; and, in a week, her strength was entirely prostrated. For some days also, at this time, there was observed to be an irregular febrile action—shivering, heat, and sweating: there was also detected the presence of a tumour, as large as the fist, on the left side of the lumbar vertebræ. These symptoms led to the opinion that there was an abscess in the sub-peritoneal cellular tissue. Transfusion could do no good in such a case. At last, the patient was attacked with violent pain in the abdomen: partial peritonitis set in, and she died on the 19th of February, 1848.

At the *post-mortem* examination, the *heart* was found flabby and softened;

and it, with the vessels, was collapsed, containing a small quantity of liquid resembling red water. The *lungs* contained miliary tubercles, not softened. The left *pleura* was adherent in many places; and the pleura contained a yellow fluid, in which were flocks of purulent matter. The *abdominal* cavity contained a large quantity of serosity, holding purulent flocculi in suspension. On the left side, the intestines were adherent, and there was a perforation in the diaphragm where it was united with the false ribs. In the fundus of the uterus, closing the aperture of the right Fallopian tube, there was a whitish hard tumour, about half as large as a hen's egg, which grated under the scalpel (fibrous polypus). There was chronic engorgement of the ovaries.

Notwithstanding the death of this patient, the transfusion cannot be said to have been the cause, but rather to have been successful in effecting the object it was intended to produce. The re-establishment of the appetite in a few days, the return of all the functions to their normal state, so that, in three weeks, the patient was sufficiently recovered to work, to run, and to occupy herself in household matters,—in spite of the imprudent actions which she daily committed, as getting in a passion, and going to church, where she was exposed to a very low temperature, then returning to the ward, where the temperature was high,—these ameliorations were truly unexpected and remarkable. The apparatus of M. Bougard prevents the introduction of air; it also prevents the introduction of coagulated blood into the vein. To prevent the formation of clots, it is necessary to maintain the instrument at a proper temperature, by compresses dipped in hot water.

THE DEAFNESS OF OLD PEOPLE: ITS CAUSE AND CURE IN CERTAIN CASES.

M. MUTTER believes that, in old people, there is a narrowing of the Eustachian tubes, caused by the propulsion of the condyles of the inferior maxilla—a narrowing which may be removed by the use of a set of back teeth, which, by opening the mouth, would replace the condyles. [*De Vriend van den Landman.*]

HOW TO GET RID OF THE PAIN AND SWELLING CAUSED BY THE STING OF A BEE.

The immediate application of honey is good; the use of *maïgo* is better; and tobacco-juice, though we cannot speak of it from experience as of the other two, may be equally or more efficacious. It is thus recommended in *De Vriend van den Landman*:—"Apply the juice of tobacco as you find it, in the mouth-end of a smoked cigar or in the reservoir of a German pipe. It not only immediately relieves the pain, but prevents swelling." The substance recommended is not, it must be remarked, the juice, but the empyreumatic oil: which, as the experiments of Dr. Morris (*Edin. Med. and Surg. Journal*) have shown, is a much more energetic poison than the juice.

REPORTS OF SOCIETIES AND ACADEMIES.

WESTMINSTER MEDICAL SOCIETY.

March 31, 1849.

Francis Hird, Esq., President, in the Chair.

The Fatal Cases of Inhalation of Chloroform. By Dr. Snow. Chloroform is much more powerful than ether, and this has been the chief cause of the accidents which have happened. The author detailed some calculations of the quantity of chloroform contained in the blood in the different stages of insensibility, and of the quantity that would cause death, and also of the quantity of vapour that might be present in the lungs at one time, the result of which calculations tended to show, that unless care were taken to dilute the vapour of chloroform largely with air, there might be so much of it in the lungs when the inhalation was left off, as would cause death by being absorbed, and added to that already contained in the blood. A handkerchief does not afford the means of regulating the proportion of vapour in the air breathed by the patient; and nearly all the fatal cases that have occurred must be attributed to this employment of the handkerchief in administering so powerful an agent as chloroform. When animals are allowed to continue breathing air, containing vapour of chloroform, after they are completely insensible, they shortly cease to breathe; but if there be not more than about five per cent. of vapour in the air they were breathing, the heart continues to pulsate for some time, and the circulation ceases only on account of the absence of respiration; but if about ten per cent. or upwards of vapour of chloroform be present, the respiration and circulation cease about the same time, in consequence of the quantity of vapour present in the lungs at the time the respiration ceased, being sufficient, when absorbed and added to that already in the blood, to paralyse the action of the heart. Under these circumstances artificial respiration can be of no avail; and there is reason to believe that these are the conditions under which chloroform has been fatal to the human subject.

The author then detailed the particulars of the fatal cases, in which it had been professionally administered. The following is a list of seven fatal cases: 1. Hannah Greener, Newcastle (*Ed. Med. and Surg. Journal*, April 1848); 2. Mrs. Simmons, Cincinnati, U.S.; 3. Young woman at Hyderabad, in Hindostan; 4. Female, aged 30, at Boulogne; 5. A case at Govan, near Glasgow, of which the particulars have not been published; 6. Boy, aged 17, at the Hôtel Dieu, at Lyons; 7. A labouring man, a dispensary patient in Westminster, under the care of Mr. Nunn's dresser. He was of opinion that these accidents might in every case be avoided by proceeding carefully, and by employing an inhaler which admits of the regulation of the quantity of air to dilute the vapour.

At the conclusion of the paper, Dr. Snow performed two experiments, to show the difference of the action of chloroform according to the quantity of air with which the vapour is diluted. In the first experiment, twelve grains of chloroform were diffused through the air in a glass jar holding 100 cubic inches, and a linnet was put in, which in half a minute was dead. In the other experiment, the same quantity of chloroform was mixed with the air in a jar holding 600 cubic inches, and another linnet was introduced; it became gradually insensible, but, being taken out at the end of about three minutes, it recovered in two or three minutes after its removal. Dr. Snow's paper is published at length in the *Edinb. Med. and Surg. Journal*, for July 1849.

April 7, 1849.

Francis Hird, Esq., President, in the Chair.

Observations on the Health of the Metropolis during the Winter of 1848-9, compared with corresponding months of the previous years. By Dr. Webster. So far from the fears entertained that the public health would suffer by the re-appearance of epidemic cholera, the aggregate number of deaths from all causes was less throughout London during the last six months, than during the same period of the previous year, particularly in regard to diseases of the respiratory organs, usually so prevalent and fatal in this country during winter and cold weather. Notwithstanding the extraordinary severity of scarlatina, and the presence of cholera, the gross mortality from all diseases met with in London, during the last six months, ending the 31st of March, was 30,263; whereas, during the parallel six months of the previous winter, the total amount rose to 36,060 deaths, being an excess of 5797 fatal cases of disease, or 18·82 per cent. in favour of the current season. The greatest difference occurred in diseases of the organs of respiration, from which (including influenza), in the winter of 1847 and 1848 the deaths were 11,197; whilst during the same six months, ending the 31st of March of the current year, only 5127 persons died from similar causes, being less than half the former amount, or an excess of 118·39 per cent. more deaths under this head in the previous winter than in that just terminated. The author then alluded to some of the pectoral diseases, and stated, amongst other interesting facts, that 1965 persons had died from pneumonia this season, instead of 3159 as in the previous, which gave an excess of 60·76 per cent. By bronchitis, 2047 died the last six months, whilst the number was 2984 in the former period, being 45·77 per cent. more than recently. Again, 3040 died from consumption this season, against 3740 in the winter of 1847 and 1848, being nearly one quarter more deaths from the same disease in the preceding year. By influenza, only 78 deaths occurred, in place of the unusually great mortality of 1739, registered during the former season. By measles, 391 persons died, instead of 1346, which thus caused three and a half times as many deaths in the previous winter, as in the one just terminated. Scarlatina formed, however, a very marked exception, in its great virulence and mortality, having proved far more fatal last winter than for many years. It was, in fact, the chief epidemic of the season; 2546 individuals, principally under fifteen years of age, having died from that virulent disease during the six months ending the 31st of March last, instead of 1362, during the parallel period of the previous year, although the mortality from the same cause was also then greater than ordinary. By typhus, the deaths were less this year than last, 1585 having died from that disease during the present winter, in place of 2201 the previous, thus making an excess of 38·86 per cent. more in the last than in the present season.

The great diminution in the mortality from typhus, is both an important and instructive fact, because the greater or less prevalence of typhus is a very fair indicator of the physical condition of a population; it is a good *nosometer* of the high or low health of a community.

Notwithstanding the existence of cholera, and the prevalent tendency to affections of the bowels, diarrhœa and dysentery had actually proved less fatal during the last six months than in the same period of the previous year. In the six months, ending the 31st of March, 1849, the deaths in London, by diarrhœa, were 554, instead of 644 in the same months of the year before; whilst by dysentery, 135 then died, in place of 116 recently. This contrast is curious, seeing that cholera has prevailed more extensively than usual in the metropolis, 984 persons having died in London by that epidemic during the last six months, whereas only twenty-one deaths from the same cause are recorded in the previous winter. The author then observed, that great as the above amount of deaths by cholera may appear,

it is not by any means so considerable as the mortality met with in the spring of 1832, when this malady also prevailed in London epidemically. For instance, during the month of March and the first week of April of the year above mentioned, as many persons died from cholera in the metropolis, as throughout the entire six months ending the 31st of March, 1849, according to the official report of the Registrar-General. Cholera having now almost ceased to exist as an epidemic in London, since only four deaths have been recorded from it during the week terminating last Saturday, the 31st of March, Dr. Webster believed little apprehension need be now entertained; and although probably, as in the year 1832, the disease may again become common next summer, or in the autumn, when cholera usually prevails in this country, it is then, for the most part, of a mild and less fatal description than the type it exhibited last winter, or previously.

From the various data detailed to the Society, the author considered that, notwithstanding the recent prevalence of cholera, and the unusually great mortality by scarlatina, London had not become by any means unhealthy, nor had last winter proved insalubrious, if compared with previous seasons, especially with those of 1847 and 1848, when almost every class of disease was both more prevalent and fatal than at any former period, even, he thought, since the time that the plague was epidemic in the metropolis.

Diathesis. Speaking generally, from his own observation, as likewise from the information of other physicians, Dr. Webster believed that almost every complaint recently met with assumed an asthenic character—if not on the first supervention of disease, at least soon afterwards; and even in those instances of acute complaints which are in appearance, or even really, inflammatory, they very often soon exhibited symptoms of great debility and exhaustion—similar, in fact, to the peculiar type noticed when the influenza was so prevalent last year in the metropolis, and in many parts of England. Scarlatina, measles, and distases of the respiratory organs, come all within this category, requiring very different management from that formerly found beneficial.

Dr. Webster observed, that although scarlatina was really one of the most prominent and serious epidemics prevalent during the last six months, whereby nearly three times as many persons were carried off as by cholera, still the latter malady occupied by far the most public attention. The present management of scarlatina differed essentially from the method other practitioners, like himself, had formerly found it expedient to employ. In previous epidemids, it was frequently necessary to resort to low diet, active purging, and even to bloodletting, either from the arm, or by leeches. During the recent epidemic in London, however, so far from depletion being required, or admissible, it was often found advisible to commence very early supporting the system, giving tonics, ammonia, wine, and sometimes even brandy, even where the symptoms, apparently, but not actually, seemed inflammatory. Debility, depression, and a great want of tone in the system, were generally characteristic of the malady, and the best remedies were the above. Although still above the average of previous seasons, the mortality is not so great as it was about the latter part of the last, and the early portion of the current year. At whatever period the present epidemic scarlatina may terminate, medical practitioners will not fail to remember its *great prevalence, rapid progress,* marked symptoms of *debility,* and its unusually *fatal character;* as likewise, that the tonic stimulating plan of treatment was almost invariably required.

April 14, 1849.

Francis Hird, Esq., President, in the Chair.

Abscesses in the Kidneys in Scarlatinous Dropsy. Dr. Cormack exhibited a left Kidney, taken from the body of a male child, aged seven

years and ten months, who had laboured under Scarlatinous Dropsy, and whose death occurred on the fiftieth day from the attack of Scarlet Fever. The urine had been intensely albuminous, and was, on one occasion, suppressed for seventy hours. Some days before death, pus was found in the urine. The left Kidney contained a well-defined circumscribed cavity at the lower part, which would admit of a large hazel-nut; there was also a smaller cavity of the size of a small pea, communicating with the other. Both cavities were chiefly filled by dirtyish white matter, somewhat resembling cerebral matter in a state of softening. Along with this, in the passage between the cavities, and in the pelvis of the Kidney, there was fluid pus. The dirtyish white matter examined under the microscope was found to contain much epithelial debris. The whole Kidney was much diseased. The cortical substance was pale, anæmic, shrunken, and horny, and the pyramids (as contrasted with the surrounding tissues) looked red and turgid. This case is given at length in the "London Journal of Medicine," May, 1849.

Pathological Condition of the Blood in Cholera.—By Dr. Garrod. The author divided his communication into two parts. In the first, he spoke of the investigations which had been made previously to the present year, and gave the results arrived at by Dr. O'Shaughnessy, Dr. Thomson, of Glasgow, and Dr. Clanny, in this country, and by MM. Rose and Wittstock, Lecanu, and others, on the Continent. In the second part, he detailed the post-mortem appearances, together with the examinations of the blood and evacuations in those cases which had fallen under his notice during the present epidemic.

Dr. Garrod stated that, although our knowledge of the changes which occur in the blood during cholera, was confessedly very imperfect, yet that sufficient was known on the subject to enable us to distinguish this disease from any other, and to solve the following problem: "Given a specimen of the human blood, to determine whether it was derived from a cholera patient."

[This elaborate paper is published in the London Journal of Medicine, May, 1849.]

April 21, 1849.

Francis Hird, Esq., President, in the Chair.

Position of the Viscera, Configuration of the Body, and the Movements of Respiration in Chest Disease.—By Dr. Sibson. The author's remarks were based upon, and illustrated by, a series of nearly forty diagrams, which had been taken from the dead and living body by himself, by means of a tracing-frame suggested to him by Dr. Hodgkin.

It is self-evident, that the knowledge of the normal is essential to that of the abnormal. In the healthy man, the important organs are all so placed in relation to each other, and to the parietes, that there is a common centre, around which they all, as it were, cluster. That centre is the lower end of the sternum; and the recollection of it is at once easy and important. Just above the lower end of the sternum, is the lower boundary of the heart, and the lower margin, coming to an angle, of the right lung. Just below the part indicated, is the upper boundary of that portion of the liver which is immediately behind the parietes. A line drawn from the lower end of the sternum, to the right, runs along the lower margin of the right lung; a line from the same point, to the left, indicates the lower boundary of the heart; the liver and stomach being immediately beneath those lines. The configuration of the chest, happily, indicates the size and outlines of the internal organs, so that they can be distinguished by the ocular inspection of the body,—the bulk and size of the organs being made apparent by certain prominences, and their boundaries by certain depressions. The lower margin of the right lung, and the lower boundary of the heart, correspond to depressions passing across the sixth costal cartilages, to the right and left of the

lower end of the sternum. The costal cartilages immediately in front of the heart, are more prominent than those over the middle lobe of the right lung. The ribs over the liver and stomach, to each side, are more prominent than those over the right and left lungs; the hepatic and gastric bulges are thus formed, the existence of which was first pointed out by Dr. Edwin Harrison. During inspiration, the position of all the viscera is changed, the diaphragm, in its descent, drawing downwards the base of each lung and the lower boundary of the heart, and pushing downwards the liver, spleen, stomach,—and, indeed, all the abdominal and pelvic organs. At the same time, the costal area of the chest everywhere enlarges. During a tranquil inspiration, the superior ribs, which perform thoracic respiration, move forward from two to six-hundredths of an inch, while the abdomen advances about three-tenths of an inch, indicating diaphragmatic respiration; at the same time, the lower, or floating ribs, move outwards about one-tenth of an inch, their motion being greater than that of the superior ribs. Their action is to expand the lower part of each lung simultaneously with the descent of the diaphragm, and they are truly diaphragmatic ribs. During a deep inspiration, the descent of the diaphragm, and the advance of the whole of the front of the chest and abdomen, is about one inch; consequently, while the thoracic respiration is increased twentyfold, the diaphragmatic is only increased threefold. The base of each lung, and the lower boundary of the heart, are about an inch lower, when the diaphragm is at the lowest; at the end of a deep inspiration, the liver, stomach, and spleen, are pushed down to a like extent. To observe the respiratory movements with greater nicety, Dr. Sibson devised the chest-measurer, an account of which is contained in the last volume of the *Medico-Chirurgical Transactions*. If the organs be in the position, and the chest be of the configuration indicated, and if the respiratory movements be symmetrical and normal in extent, we have the assurance, so satisfactory both to the medical man and the patient, that there is no organic disease of the heart and lungs. This important information can usually be gained with sufficient accuracy by means of ocular inspection and percussion, by the application of the hand during respiration, and, if needful, by the use of the chest-measurer. When the stomach and intestines are much swollen with flatus, they push up the diaphragm, and compress the lungs and heart upwards into the chest. The lower boundary of the heart and the lower margins of the lungs are then unusually high, being, in cases of extreme distension, about an inch higher than usual. The form of the chest and abdomen is changed in proportion to the distension, the abdomen being full, rounded, and tense, while the chest is flattened in front, and widened sideways. In cases of the class referred to, a chain of morbid sensations in the chest is often referred by the patient to disease in the chest itself, though it is really due to the abdominal distension; both dyspnœa and palpitation caused by the physical compression upwards of the heart and lungs; and in the train of symptoms, headache, dizziness, and even unconsciousness are often occasioned by the difficulty with which the blood returns from the head to the right side of the heart. If the stomach and intestines be unusually empty, the diaphragm, instead of being raised, is lowered, and the lungs and heart, instead of being compressed upwards and shortened, are lowered at their base and lengthened. In bronchitis, and vesicular emphysema, the lungs and the heart, especially its right cavities, are enlarged. In extreme cases they are larger, and their lower boundaries are lower than they are in health during the deepest possible inspiration, the change in position amounting, in some cases, from an inch to an inch and a half. The whole diaphragm being lowered, the liver, stomach, and spleen, and indeed all the abdominal viscera, are correspondingly low in their position. The configuration of the chest is at the same time correspondingly changed. The enlarged condition of the lungs and heart is indicated by the marked and barrel-like roundness and fulness of the chest, especially at its upper part; for while that part is prominent, the lower end of the sternum and the upper part

of the abdomen are unusually hollow. In the emphysema of childhood, the sternum is most prominent some little way above the lower end; in that of manhood, the greatest projection is at the junction of the two bones of the sternum; while in that of old age, the lower end of the sternum and the xiphoid cartilage are the projecting parts. The respiration of persons affected with emphysema is very characteristic; they are already, as it were, almost at the top of their breath, and they breathe with labour. The motion of the upper part of the chest is usually somewhat increased, but the lower end of the sternum, and the adjoining cartilages, instead of advancing, actually fall back. The same remarkable phenomenon is observed in cases requiring tracheotomy, when the obstruction to respiration in the larynx is extreme; in one case of that class, the whole of the walls of the chest fell backwards, instead of advancing during inspiration, at the same time that the abdominal motion was unusually marked. The cause of this falling back of the walls of the chest, during inspiration, is evident; the diaphragm, by its descent, lengthens the lung, and, as air can only enter the air-cells with difficulty, the lung collapses, and the costal walls over them collapse also, being forced backwards by atmospheric pressure. In extreme laryngitis, as in emphysema, the lungs are lengthened, owing to the action of the diaphragm; but while the lungs are amplified in emphysema, they are narrowed in laryngitis, and the chest is consequently lengthened, flattened, and narrowed; at the same time, the heart, being denuded of lung in front, comes into extensive contact with the walls of the chest, and the heart's impulse is therefore felt extensively; whereas, in emphysema, it is only to be perceived behind and below the xiphoid cartilage. When much fluid is effused into one side of the chest (as has been observed and well described by several authors), the fluid necessarily compresses the lung on the affected side, and all the neighbouring organs are pressed aside from their usual position. If the effusion be on the left side, the heart is displaced to the right of the sternum, and the stomach, spleen, and liver, are displaced downwards, and to the right; at the same time, the ribs are pushed outwards and separated farther from each other by the contained fluid; consequently, the whole of the affected side is enlarged. The respiratory movements are remarkably affected; while those of the whole of the healthy side are exaggerated, those of the affected side are either lessened, arrested, or reversed. When the effusion disappears, it is interesting to notice the progressive return of the viscera towards their normal position. If, while the fluid disappears, the lung does not regain its power of expansion, but remains permanently condensed, the displaced organs will return beyond their former position, and in part occupy the place previously occupied by the condensed organ; consequently the margin of the healthy lung and the heart will be drawn abnormally to the affected side, and the abdominal organs will rise unusually high into that side of the chest; at the same time, while the opposite side is enlarged, the affected side is narrowed and flattened. The respiratory movements are at the same time restrained or annihilated on the affected, while they are exaggerated on the healthy side. If the upper lobe be the seat of tuberculous cavities, while the lower lobe is comparatively healthy, the position of the viscera is not materially changed; but the ribs over the affected part are flattened, and their respiratory motion is diminished. If the lower lobe be the seat of pneumonia, while the other parts are healthy, the affected lobe is permanently enlarged; the thoracic organs are not materially displaced; the walls of the chest on the affected side are somewhat fuller than usual; and the respiratory movements of the ribs, especially the diaphragmatic or lower ribs, and of the abdomen on the affected side, are restrained, while those of the whole opposite side are exaggerated.

Dr. Sibson described the position of the viscera, the form of the chest, and the movements of respiration in pericarditis; in enlarged heart, without pericardial adhesions; and in enlarged heart, with pericardial adhesions. He ex-

hibited two men, one healthy, the other affected with tubercular disease of the whole left lung. In the former, the position of the viscera, the form of the chest, and the movements of respiration, were symmetrical and normal; in the latter, the inner margin of the right lung encroached on the affected side, being considerably to the left of the sternum; the whole of the left side was narrowed and flattened, while the right side was unusually developed; and the respiratory movements, both thoracic and abdominal, of the whole of the affected side, were almost annihilated, while those of the opposite side were, throughout, exaggerated.

APRIL 28, 1849.

FRANCIS HIRD, ESQ., PRESIDENT, IN THE CHAIR.

SUBACUTE INFLAMMATION OF THE OVARIES AND FALLOPIAN TUBES, A CAUSE OF STERILITY. By DR. TILT. This paper was published at length in the LONDON JOURNAL OF MEDICINE for June 1849.

EXTRA MEETING, MAY 5, 1849.

FRANCIS HIRD, ESQ., PRESIDENT, IN THE CHAIR.

DR. TYLER SMITH exhibited an INSTRUMENT that he had invented for DEOBSTRUCTING THE FALLOPIAN TUBES in cases of sterility arising from their obstruction or occlusion at the uterine extremities, by thickened mucus, or other impediments. The instrument, in the use of which the speculum is always required, consists of a small silver catheter, bent like the uterine sound, to adapt it to the curve formed by the uterus and vagina, and having a sudden lateral curve at the distal extremity, to the right hand, or to the left, so as to point, when *in situ*, to the uterine mouth of the Fallopian canal, which it is proposed to examine. Through the catheter, a fine, flexible, whalebone bougie is passed into the Fallopian tube. When the small bougie is thus passed, so as to project at its Fallopian extremity, the instrument represents accurately the singular direction taken by the generative canal, from the mouth of the vagina to the fimbriated extremity of the tube. This novel operation proposes to bring an important organ under treatment, which has hitherto been removed from all interference, but is one requiring extreme caution in its employment.

SEAT AND TREATMENT OF STRICTURE IN THE URETHRA. By MR. HENRY SMITH. It is generally inculcated in the works of most writers on Stricture, that the seat of this affection is most commonly the membranous portion of the canal; but there is some error in this, as is evident by an examination of the preparations of Stricture of the Urethra, preserved in the various museums of the metropolis. Of ninety-eight specimens, he found that the seat of Stricture was in the membranous part in twenty-one instances, whilst in seventy-seven the obstruction was in front of the triangular ligament, in various parts of the urethra, but most frequently at the bulb, or just in front of it. The conclusion, from the examination of these cases is, that the general opinion respecting the seat of Stricture is incorrect, and that it is to be met with much more frequently in the bulb, or just in front of it, than in the membranous portion of the canal. An excellent anatomist (Mr. Hallett) had examined the specimens in the Museum of the College of Surgeons with him, and agreed with him respecting the seat of the disease. He was also supported by John Hunter and Astley Cooper; the former found Stricture most frequently in the bulb, the latter, just in front of the bulb. Some consider that injections are liable to produce Stricture; but the author believed that a proper use of injections rather tends to prevent Stricture, as they no doubt overcome the chronic inflammation of the canal, in which it originates. Some forms of Stricture, especially the painful and irritable, are rendered obstinate, and the treatment unsatisfactory, by the too frequent introduction of instruments; and in those cases where the obstruction is recent,

and there is a tendency to hæmorrhage, great caution is requisite. In impermeable and undilatable Strictures, and those accompanied with perineal fistulæ, it is necessary to resort to the operation of *urethrotomy*. There are two modes of performing it, the first by dividing the Stricture from within by a concealed blade; and the second, by cutting through the perinæum. The former operation might be useful in cases of Stricture near the orifice, and in the spongy portion; but it is a dangerous measure in Strictures at the bend of the urethra, as the surgeon is working in the dark. Dividing the Stricture from without through the perinæum is the safest and best method. Mr. H. Smith had lately seen several instances, in the practice of Mr. Fergusson, when the operation had been performed with immense benefit. The use of the bougie, or catheter, should be cautiously kept up for some time.

EXTRA MEETING, MAY 12, 1849.

FRANCIS HIRD, ESQ., PRESIDENT, IN THE CHAIR.

RENAL TOXÆMIA. DR. ROUTH exhibited the kidneys of a patient, and gave the following account of the case. He had been under treatment at the Royal Free Hospital for obstinate vomiting and constipation. He had taken hydrocyanic acid and croton oil pills without effect, and gradually became reduced to an extremity of weakness. Dr. Routh saw him for the first time on the 9th of May. He had had an ulcer in the thigh, which had healed. He had been ailing, more or less, for twelve months, though not prevented from following his occupation as a painter. For twelve years, he had suffered occasionally from what he called a stricture. He had never had syphilis, gonorrhœa, and had never used injections. Sometimes he was able to pass his water in a full, sometimes only in a scattered stream; sometimes it would stop suddenly. The urine was sometimes very dark, and he lately had occasionally passed blood. His habits were regular. The fatal attack began about ten days ago, before Dr. Routh saw him, with vomiting and constipation unrelieved by medicine. His countenance was such as is considered symptomatic of malignant disease; his intellect was clear; he was sleepless; the heart's sounds were weak; the pulse was very feeble and frequent. He was much troubled with hiccough, which came on in paroxysms of half an hour to an hour, and were brought on by any exertion in talking or attempt to swallow food. He could not keep anything, liquid or solid, on his stomach; the abdomen, somewhat tympanitic, was soft, except in the region of the transverse and descending colon, where it was harder. There was no pain in the epigastrium or loins; although about a fortnight previously he had complained of some pain in the latter region, which had yielded to a mustard poultice. He was ordered *creasote*, dilute prussic acid, aa, m. ij, to be taken every two hours in half a fluid ounce of water; a croton oil pill every six hours; and to take gruel or arrowroot, with wine, by teaspoonfuls at a time, and frequently. On the 10th, the hiccough was less, but the sickness no better. He had had no motion; he complained of great weakness, and was pulseless at the wrist; the heart's sounds were regular. He was ordered to have wine and ammonia, and a turpentine injection immediately. He became insensible towards night, and died at 11 P.M., the bowels not having been relieved.

Post-mortem examination, thirty-three hours after death. *Head*. There was some fluid in the sub-arachnoid tissue, and about half a fluid ounce of clear serum was contained in all the ventricles together. *Chest*. The right auricle of the heart was exceedingly thin; the cavities of the heart contained large polypi. The lungs were healthy. *Abdomen*. The intestines contained some fluid and solid fæces; the jejunum and its villi very prominent, and somewhat softened. The left kidney was larger than natural, the capsule tearing off readily and cleanly. On section, the substance of the kidney was mottled white here and there especially in the pyramidal portion, which appeared swollen and was hard yet somewhat elastic. Here

and there were other patches of a tubular form, about the thickness of an ordinary quill, very white, varying in length from two lines to half an inch, containing granular and calcareous deposits. The right kidney presented the same general appearances on section. In addition to the preceding appearances, one or two pouches in the pelvis of the kidney, somewhat dilated, and a small cavity about the size of a pea, in the substance itself, were observed, containing sanguineo-purulent fluid. The ureters were healthy. The bladder was contracted, and rather thickened in its coats, and contained about half a teacupful of clear urine, with a sanguineo-purulent sediment. The posterior and inferior surface of the right kidney was adherent to the psoas muscles, between which and it, and extending as high as the twelfth dorsal vertebra, and as low as the pectineal line, was a collection of pus; a portion was also superiorly infiltrated in the muscle itself. The liver, spleen, and pancreas were healthy. The *vertebræ* were healthy: the *urine* had a feeble alkaline reaction. The opening in the prepuce was scarcely perceptible; between it and the glans, there were a little clear mucus and blood. No stricture could be detected in the urethra.

The case was important, inasmuch as the urgent symptoms during life were rather those of intus-susception or strangulated hernia, than of abscess in, or around, the kidney; nor did it clearly appear, how the secondary abscess had been produced, or should have been so suddenly fatal. The cicatrix of the ulcer in the thigh was examined, and found to be superficial; nor was any pus or diseased bone found in its neighbourhood.

PUERPERAL CONVULSIONS: THEIR DEPENDENCE ON TOXÆMIA: EXPLANATION OF THEIR MORE COMMON OCCURRENCE IN PRIMIPARÆ. By DR. CORMACK.

Dr. Cormack detailed the history of three Cases of Puerperal Convulsions, which had occurred in his practice. The main object of his paper was to point out the connection which exists, in a very great proportion of cases, between Renal Congestion and Puerperal Convulsions. He considered Puerperal Convulsions to be—though not always, yet generally—the toxicological results of non-elimination of the excretions of the blood; and that, in by far the greater number of cases, this non-elimination depends on renal congestion, caused by the pressure of the gravid uterus. Œdema and albuminuria are frequent concomitants or precursors of convulsions, as shown by Dr. Lever and MM. Devilliers and Regnault. The gravid uterus, or any tumour pressing on the renal veins, must cause congestion of the kidneys and consequent toxæmia; and this is the more injurious to the pregnant woman, as her blood requires an extra degree of depuration, both from excrementitious matter from the fœtus, and also from the elements of the milk. Retention of these should, Dr. Cormack thought, be considered as the cause, not only of convulsions, but also of various other distressing symptoms occurring in pregnancy. Uterine epilepsy probably often arises from toxæmia; and the suppression of the lochia may induce post-partum Puerperal Convulsions. When convulsions recur *after* delivery, we must suspect structural renal disease. The explanation of delivery generally arresting convulsions, is not so much that uterine irritation is lessened, as that the hyperæmic state of the kidneys is relieved. The most common subjects of Puerperal Convulsions are strong, healthy young women, pregnant for the first time; and an examination of the cases recorded by Authors proves this fact. In them, the abdominal walls are most unyielding, and unable to relax under the pressure of the gravid womb. Cases of Puerperal Convulsions in subsequent pregnancies might be either toxæmic or non-toxæmic. The toxæmic cases may be classed under the following heads: 1. Persons who have never gone to the full time; 2. Persons of extreme muscular development; 3. Persons suffering from structural disease, or obstruction of the kidney; 4. Excessive volume of uterine contents, including twin cases, etc. Dr. Cormack was desirous of drawing attention to toxæmia as a cause of Puerperal Convulsions, and also of recognizing

non-toxæmic convulsions. He thinks that Dr. Tyler Smith, who has treated this subject more philosophically than any preceding writer, has, while recognizing toxæmia, attached too little importance to it.

[Dr. Cormack's memoir was published in the London Journal of Medicine for June, p. 522.]

Dr. Tyler Smith expressed his sense of the importance of the view taken by Dr. Cormack. He considered it would be difficult to estimate too highly the influence of impurity of the blood, as a direct irritant of the nervous centres in pregnancy. It was necessary to take a comprehensive view of the causes of blood-poisoning dependent on the pressure of the gravid uterus. There was the pressure on the intestinal canal, causing constipation; there was the pressure upon the emulgent veins, causing albuminuria, and the retention of urea in the blood; there was the pressure upon the hepatic vessels, which he had frequently observed to produce pink deposits in the urine; and lastly, there was deficient oxygenation of the blood, from pressure upon the thoracic viscera. All these agencies interfered with the proper depuration of the blood in advanced pregnancy, and often produced distressing nervous symptoms. But it was curious to observe, that during pregnancy, certain vicarious or complementary secretions were set up, which tended to preserve the blood in a healthy state. There was the sickness and vomiting of pregnancy, the salivation which sometimes occurred, the increased action of the glands of the axillæ and of the skin generally, and the secretion of milk by the mammæ, which was sometimes profuse during the latter months, particularly in cases of albuminuria. All these actions tended to compensate, and were no doubt intended to compensate, for the effects of pressure upon other organs. The fœtus must also be considered as an excretion, so far as the mother is concerned; and a large quantity of matter, which would otherwise have to be eliminated as *effete* from the maternal blood, went to form the liquor amnii, the membranes, the bones of the fœtus, the meconium, fœtal urine, etc. These points required consideration in our estimate of the state of the blood in gestation. Still, there could be no doubt that in many cases an impure state of this fluid, a true toxæmia, did obtain, and affected the spinal centre, the organ of convulsions, in a centric or direct manner. He believed this to be a predisposing rather than an exciting cause. It was only when the toxæmia was very intense, as in poisoning by carbonic acid, that convulsions, depending solely upon the state of the blood, occurred. If it were otherwise, convulsions would often occur independently of the excitement of parturition. But we generally saw that convulsion was actually excited when the predisposition existed, by some manifest irritation acting in a reflex manner, such as the irritation of the parturient passages during labour, or irritation of the stomach, bladder, or intestines. He said this with the fullest recognition of the importance of Dr. Cormack's views, particularly in first pregnancies, but he wished to guard against their too exclusive application.

Extra Meeting, May 19, 1849.

Francis Hird, Esq., President, in the Chair.

Two Small Maggots, from the Ear of a Gentleman, while exhibited by Dr. Routh. This gentleman held the office of superintendent in some gold mines in Brazil. Being engaged, on a Thursday in October 1846, in reading, he was tormented by a fly, at which he struck with the palm of his hand, and accidentally pushed it within the meatus auditorius. He was not able to extract it till four or five minutes after, when his daughter succeeded in doing so by means of a small forceps. The fly came out entire, excepting one leg, and alive; it was seen by every member of the family, and recognized to be a *musca carnaria*, or flesh-fly. On the same evening, the gentleman began to feel an uneasy sensation in his ear, which went on from bad to worse, until the internal ear became exceedingly painful. The sensation was

as if there was something like a gnawing or rasping of the drum. The natives around him stated that maggots had been found in the ear. An English medical gentleman was sent for, who ordered a few drops of solution of opium, in dilute nitric acid, to be instilled into the ear. The pain and gnawing, however, were in no way relieved. On the Saturday, at 4 P.M., he was seized with a convulsion: he moaned terribly, plunged his head in his pillow, bending forcibly the joints, and rolling the eyes; the general character, however of the spasmodic movements were clonic; the convulsion lasted from seven to ten minutes. The medical gentleman called the same evening, with a forceps, extracted a living maggot, and ordered a weak solution of bichloride of mercury to be applied within the ear. The rasping, gnawing, and pain continued. At 11 P.M. the same evening, another convulsion occurring, further medical aid was called in, and, on consultation, it was agreed to apply white precipitate, suspended in milk, to the ear. This was done, and somewhat relieved the pain; soon after, two other maggots came out alive. On the Sunday morning another convulsion occurred, but much less violent; the same day a fourth maggot dropped out, also alive. From this time, all the acute pain subsided, but slowly at first, as a purulent discharge continued to flow from the ear, but which at last yielded to injections and counter-irritants. The patient finally recovered in about six weeks, but had remained deaf in that ear ever since. The case related was very interesting; 1st, as showing the short space of time in which the ova were deposited, the fly not having remained in the ear more than five minutes; 2nd, as showing the rapidity in which they were hatched in the ear; 3rd, as exemplifying the non-poisonous quality of the cerumen to maggots of muscæ; and, lastly, as indicating the danger of delay, and the efficacy of white precipitate as a means of cure. Two cases only were recorded in Cooper's *Surgical Dictionary*, in one of which convulsions also were present, but in neither was the history of the first deposition of the ova given, which in this case was distinctly traced to a *musca carnaria*.

The Operation for Strangulated Hernia.—By Mr. Hancock.—The recommendation for not opening the sac, he stated, had recently been brought prominently under the notice of the profession, and had at various times been ably advocated by Petit, La Dran, Monro, Sir C. Bell, Bransby Cooper, Aston Key, Luke, and Gay, in whose hands it had been successful, particularly in those of Mr. Luke; whilst the statistics advanced by the latter gentleman certainly appeared, at first sight, greatly to favour this mode of proceeding. On the other hand, it has also been as ably opposed by men of eminence—viz., Dupuytren, Richter, Hey, Heister, Sir A. Cooper (excepting in old and large incarcerated Hernia), Lawrence, Liston, and Lizars, and more recently by South. A closer inquiry, however, into the statistics and arguments adduced in favour of this operation, tends greatly to diminish its claims to superiority, and proves that the mortality after operations for Strangulated Hernia depends, in most instances, upon causes entirely independent of the operation; that opening the sac does not, in reality, increase the danger, but that, on the contrary, the advantages of this method are so great, that, as a general rule, it ought to be adopted as the safer mode, and as presenting the greater certainty of success. It having been urged, by the advocates of Petit's operation, that by its adoption we avoid the following dangers—viz.:

"Peritoneal inflammation, consequent upon the exposure of an inflamed or strangulated portion of the bowel, which, according to Key, is the cause of death in the majority of cases;

"Hæmorrhage into the cavity of the abdomen, should a vessel be wounded;

"Risk of wounding the intestine;

"Opening the sac, and thereby laying bare the peritoneal cavity of the abdomen;

"Immediate manipulation of parts so important to life; and, according to Gay, inducing unhealthy processes in the external wound;—

the author asks, in the first place, are these objections valid or tenable? Have not the surgeons in question, in their anxiety to support their own particular views, overlooked the real causes of failure, and grasped at the shadow whilst they neglected the substance? The published records of Strangulated Hernia cause a feeling of surprise in the minds of the readers, not that the mortality has been so great, but that it has not been greater; as every rule of good practice, of common sense even, appears to have been violated in the treatment of these cases. When strangulation took place, instead of early relieving the stricture, the patient was left until almost dead; the surgeon, in the meantime, torturing him in all manner of ways, in order to prevent the necessity of an operation, which was at last obliged to be performed under every disadvantage, the gut being bruised, inflamed or mortified, and the patient in a state of collapse, worn out by suffering, and by the prolonged, yet abortive, attempts at reduction. When the intestines, from the injury sustained, had lost their power of action, they were still more irritated and injured by the exhibition of purgative medicines, both before and after the operation; yet those who pursued this practice, would most strenuously have deprecated the employment of purgatives in cases of idiopathic enteritis. Again, notwithstanding the patient was almost in a state of collapse, from the severe constriction exerted upon the intestine, his vital powers were still more depressed by the exhibition of tobacco, (either in solution or in fumes,) tartar-emetic, and other equally destructive agents. These points have been all lost sight of; even mortification and rupture of the intestines, and disease of vital organs, have been overlooked; and deaths occurring under such circumstances have been ascribed, not to their true cause, but to the opening of the sac, and classified accordingly.

With respect to the remark made by Key, "that in the usual operation, the majority of fatal cases are consequent upon the exposure of the inflamed or strangulated portion of the bowel caused by opening the sac", Mr. Hancock observed, that the history of Strangulated Hernia proves, by every-day experience, that the peritoneum may be cut with impunity. He is willing to admit that, if the healthy peritoneum be cut or irritated, peritonitis may be induced, although this even does not always occur; but he argued, if an inflamed peritoneum is cut, the inflammation does not necessarily increase, especially when that inflammation results from some exciting cause removable by the incision. The operation then becomes a relief to the patient; whereas, when made in the healthy peritoneum, it inflicts a violence on the part. He is supported in this belief by the observation of Sir Charles Bell, that a peritoneum, when diseased, may be cut with greater impunity than when in health. The abdominal sections in ovariotomy prove this; the removal of large portions of omentum prove it; the operations of paracentesis abdominis prove it; and the success which attended the author's case of cæcal disease also tends to strengthen the position. Again, in reply to the question, Is the general peritoneal cavity laid bare by opening the sac? the author observed, that the communication between the sac and abdomen is completely closed by the protruding gut or omentum, and that, even when the intestine is returned, it lies so close to the ring, that very little, if any, air can gain access to the abdominal cavity, even should it prove injurious in so doing, of which he had great doubts, having had patients under his care who, from wounds, have had the abdominal cavity exposed for a much longer time than would be required for the operation for Strangulated Hernia, and have recovered without any urgent symptoms.

The author then adduced arguments to prove, that the chance of wounding the intestine was not diminished by the performance of Petit's operation, and objected strongly to the plan adopted by Mr. Luke, of scarifying, in certain cases, the thickened neck of the sac at different places, without penetrating its entire thickness. The modification of Petit's operation, lately introduced by Mr. Gay, was described; and Mr. Hancock remarked, that the neck of the

sac must be reached, whether the structure be got at directly or in front, or on the inner side; the only difference being, that in the one case the surgeon can attain his end directly, in the other, only in a round-about manner and in the dark—a very objectionable mode, as the operator should always, if possible, see what he is doing. Neither can it be at all admitted, that there is more danger of wounding the intestine in opening the sac in the ordinary operation, than in forcing the blunt-pointed bistoire cache (although with the least possible amount of force) between the strangulated femoral Hernia and the pubic margin of the ring, at the very point where ulceration of the gut takes place, from the pressure exercised by the sharp edge of Gimbernat's ligament, as has been noticed by Chevalier, Breschet, and indeed by all surgeons of experience. The other objections to the usual operation, mentioned at the commencement of the paper, were next commented on, with a view to prove that they were not entitled to the large amount of consideration ordinarily bestowed upon them.

Adjournment. After a suitable valedictory address from the President, the Society adjourned till October.

October 6, 1849.

Francis Hird, Esq., President, in the Chair.

The President, on taking the Chair, stated that the Council, in compliance with the known wish of many Fellows, had resolved to resume the meetings some weeks earlier in the season than had hitherto been usual. The great mortality from Cholera, and the questions excited in the profession by the progress and manifestations of the pestilence, would, he believed, form abundant matter for interesting and improving discussion; and he hoped that, in all the circumstances, the Fellows would approve of what the Council had done in thus early convening the Westminster Medical Society. The President then adverted to the great prosperity and popularity of the Society, and remarked that, in his experience of London scientific institutions, it was without a parallel. The overflowing audience which he addressed, and the rapid accession of new Fellows during last session, were particularly noticed.

[During the evening, three new Fellows were elected; and seventeen petitions for admission were read from the Chair.]

Health of London during the Six Months terminating 29th of September, 1849; more especially in reference to Cholera. By John Webster, M.D., F.R.S. [This communication appears in this Number; vide p. 992.]

Mr. Harding said that no case of Cholera had occurred at St. Pancras Workhouse, although that establishment contained fourteen hundred persons. The supply of water was from an Artesian well.

Dr. Gormack said, that, considering the limited time which remained before the hour arrived at which the meeting must break up, and believing that other Fellows might desire to comment on Dr. Webster's essay, he should confine his observations to a very few of the topics which he had noted as subjects suggestive of discussion. He must, however, in the first place, remark, that the profession was much indebted to Dr. Webster for the highly practical analysis which he had given of the vital statistics of London during the last six months.

Notwithstanding the appalling mortuary details which had been laid before the Society, the general inference to be adduced from all the facts was this—*that Cholera was a disease pre-eminently under the control of a well-directed system of preventive medicine and sanitary police.* Be it granted that the pestilence has travelled to us from the far East, and that, in addition to Dr. Webster's four causes—viz. 1, atmospheric, 2, local, 3, constitutional, and 4, exciting, there must be added, as an essential, the existence of a specific atmospheric

constitution, or, as some would have it, a specific poison; yet we find, that when it does reach our shores, it can hardly find any victims except amid the vapours of grave-yards, cesspools, and open sewers, or in the neighbourhood of swamps and rivers. It appears, then, that though a pervading epidemic influence may be necessary, yet the atmospheric causes, which are of real practical importance as regards the prevention of the disease, are of a comparatively limited and local nature, and partake of the character of those miasmata which give rise to pernicious fevers. These, when only endemic, may assume the intermittent type; but every few years they assume the graver form of remittent or continued fever. Miasmata, then, seem to be all-potent in the generation of Cholera, as well as of the diseases already alluded to. Many years ago, Moscati found that air collected during the night from the insalubrious rice-fields in the north of Italy was heavier than other air; and that, when it was condensed, it showed albuminous flocculi of cadaverous smell. Analogous observations have been made by many others in different parts of the fever districts of Italy; and is it not possible that the living organisms observed at Bristol by Drs. Brittan and Swayne (or others of a similar nature), might have been found by the Italian physicians, had they used sufficiently powerful microscopes, and had they been acquainted with the characters of microscopic fungi? It is not necessary, however, to make out the existence of microscopic fungi, or conferva, in districts where Cholera and intermittent fever prevail, to establish the pathological relation of the two. The history of past epidemics, as well as the facts at the present moment under observation, alike testify to this great truth. Comparetti, of Padua, in 1765, described Cholera, such as has prevailed during the last month in London, under the name of *febris perniciosa colleriea sincopalis*. Torti, of Modena, and Raimond Restaurant, describe the same disease; and, in 1680, the latter physician treated choleraic intermittent fever by cinchona. Laudanum and cinchona were the medicines in which Comparetti trusted. These physicians speak of the severity of the disease being so great, that the patients sank in the cold stage of the first paroxysm. Was not this Cholera such as has been desolating London? Dr. William Currie, of Philadelphia, speaks of "Cholera with regular periods like a tertian." Such views are identical with those more recently, and so clearly and philosophically developed, by Dr. James Bird, Dr. Charles Bell, and others.

The remittent and intermittent type of Cholera, Dr. Cormack remarked, can be best seen when the disease is studied in families, and in a district, from house to house; all cases, both slight and serious, being equally valuable in supplying the full natural history of the malady. From observations of this kind, Dr. Cormack was firmly impressed with the conviction, that Cholera was a remittent or intermittent fever; that the recoveries from the cold or collapse stage were to be attributed, not to the therapeutic action of medicines administered, so much as to the inherent or essential character of the disease; or, in other words, that the collapse of Cholera, and the cold stage of a simple ague, had alike a tendency to end in reaction. In both cases, provided the functions of life were not at a complete stand still, some good might arise from the application of heat to the surface, the careful administration of certain stimuli, which act rather on the capillaries than the heart—such as camphor—the restraint of the serous exudation from the intestines by means of acetate of lead enemata, (except so far as its moderate continuance may be necessary to relieve the hazardous congestion of internal organs during the cold stage,) and, above all, the modification of the character of the fever by means of quinine. In addition to the clinical and other facts already mentioned, certain experiments of Magendie might be cited. That physiologist injected a small quantity of putrid water into the veins of dogs; and he states, that among the intestines there was found an exhalation of a matter, in colour resembling the water in

which meat has been washed, and which adhered to the mucous coat of the intestine. This he regarded, not as an intestinal secretion, but as a part of the blood itself. As such, Dr. Cormack regarded the "rice-water" stools and vomit in Cholera; they were really and truly hæmorrhagic phenomena, and required to be so treated. To allow them to proceed unchecked, under the idea that morbid matter was being eliminated, was a fatal error, which it only required calm observation, and a little practical contact with the disease to dissipate. In moderation, they were often useful by relieving congestion; but in the extent which to they usually occurred, when uncontrolled, they soon rendered the patient anæmic, and the blood which they did leave was so inspissated as to be unable to circulate in the small vessels. Dr. Cormack concluded by stating, that while in each case, the special symptoms might require special modifications of treatment, *the key-stone to the successful management of the disease was this,—to bear in mind that Cholera was a fever, and that the serous purging was an exhausting hæmorrhage, which left, also, the residual blood in an unavailable condition.*

Mr. STREETER would state a fact connected with the cryptogamic theory. In the urine, first secreted after a recovery from collapse, and withdrawn by catheter from the bladder of a lady by himself, Mr. Quekett, on microscopical examination, detected and had made a drawing of what he then termed "curious organic bodies." This occurred before Dr. F. Brittan had exhibited to Mr. Quekett his specimens derived from vomit, dejection, and atmosphere, for verification of their cryptogamic nature. This fact clearly showed that these entophytes really existed; and, if introduced into the system by the alimentary canal, had actually traversed the circulating blood. He understood from the medical journals, that they had also been observed in the perspiration.

Dr. LANKESTER regarded the fact just stated as an interesting one; and he would test the theory advanced regarding fungi by this, and by the circumstance of the same bodies being found in the air, and the excretions of Cholera patients by Dr. Brittan. The conclusion that these fungi were the cause of Cholera was a very hasty one. It was proving too much, in showing that bodies of the same character were found in the urine. How did they get into the bladder? Surely not by being passed into the stomach, absorbed into the circulation, and passing into the kidney; yet this must be the case, if the theory advanced by Dr. Brittan were correct, for it was impossible to conceive that they passed up the urethra. Then, if these supposed fungi were really the cause of Cholera, how did you explain the suddenness of the attack in some cases of this disease? It was true that confervoid bodies were occasionally found in the body, as proved by Drs. Williams and Cowdell; but how was it, that the bodies described by Dr. Brittan were only occasionally found? His own (Dr. Lankester's) suspicion was, that these bodies really consisted of changed epithelial cells. Mr. Busk had examined the evacuations of Cholera patients carefully, and had never been able to find any definite bodies in them. Taking this, though merely negative evidence, he thought it sufficient to show that the bodies in question were not what some supposed them to be.

Dr. COMRIE, in reference to the fact mentioned by Mr. Streeter, stated, that in the urine of a Cholera patient whom he had attended along with Dr. A. Henry, the latter had detected microscopic fungi, having some resemblance to the *torula cerevisiæ*, which had been shown to Mr. W. Bowman. The specimen of urine in which they were found was intensely coagulable, more than one-third of the liquid separating as a thick white sediment, when treated by heat and nitric acid. In this urine, were seen a large quantity of epithelial scales, numerous fragments of tube casts, and, in smaller quantity, the vegetables which had been submitted to Mr. Bowman. When the urine had been kept a day or two, the plants became much more numerous.

OCTOBER 13, 1849.

FRANCIS HIRD, ESQ., PRESIDENT, IN THE CHAIR.

PATHOLOGY AND MODE OF COMMUNICATION OF CHOLERA. By JOHN SNOW, M.D. He had been led to consider Cholera as being, in the first instance at least, a local affection of the mucous membrane of the alimentary canal, and not an affection of the whole system, depending on a poison in the blood. In diseases caused by a special poison absorbed into the blood, general illness of a febrile character preceded any local symptoms which might arise; but this was not the case in Cholera. The loss of the watery part of the blood, in all the cases he had seen, was sufficient to account for the collapse and all the general symptoms; and when Cholera commenced gradually, it could often be checked, and prevented from proceeding beyond the stage of diarrhœa, by remedies adapted to act merely on the mucous membrane. The recent discovery of peculiar microscopic cells, believed to be of a vegetable character, in the Cholera discharges, tended to confirm this view. The history of Cholera, as an epidemic, showed that it was communicable by human intercourse; and although there were many facts opposed to the theory of Cholera being contagious, in the same way that the eruptive fevers were believed to be, yet, in the sequel, these facts would afford the strongest evidence of the communication of the disease. If the alimentary canal were the seat of Cholera, and the disease were communicable, it was clear that it must be conveyed by something which passed from the mucous membrane of the stomach and intestines of one patient to that of another, which it could only do by being swallowed; and as the disease grows in a community by what it feeds upon, attacking a few people in a town first, and then becoming more prevalent, the Cholera poison must multiply itself by a kind of growth, like every other morbid poison. The instances in which minute quantities of the ejections and dejections of Cholera patients must be swallowed, were sufficiently numerous to account for the spread of the disease. The bed-linen nearly always became wetted by the Cholera evacuations, which were almost without colour and odour; and the hands of persons waiting on the patient became soiled without their noticing it; consequently, unless they were very cleanly in their habits, and also had opportunity for washing their hands, they would be liable to swallow some of the excretion, and leave portions on the food they handled or prepared, which had to be eaten by the rest of the family, who, amongst the working classes, had to eat their meals generally in the sick room; hence the thousands of instances in which, in this class of the population, a case of Cholera in one member of the family was followed by other cases; whilst medical men and others who merely visited the patient, without taking food, generally escaped. The mining population of this country had suffered more from Cholera than any other; there were no privies in the mines, and as the workmen usually stayed down for eight hours at a time, they took food with them, which they ate with unwashed hands; hence, in the event of one workman getting the Cholera, the others were very liable to contract the disease, and take it to their families. One important medium of the conveyance of the Cholera poison from one patient to another was the drinking-water, when it became contaminated by the evacuations, either by their permeating the ground and getting into wells, or by their being conveyed by sewers into a river. Since he (Dr. Snow) first published his views on this point, Dr. William Budd had found the microscopic bodies, before alluded to, in such drinking water of Cholera districts as received the contents of sewers. Dr. Snow then related a number of instances where, as in Albion-terrace, Wandsworth-road, there was a very high mortality from Cholera, in connexion with the contamination of the water with discharges from the patients. He attributed the high mortality on the south side of the Thames to three causes: 1st, the drinking from certain tidal ditches, which is common in Rotherhithe and Bermondsey; 2nd, the water supplied by the water-

works in this part of London is generally procured from the Thames in the midst of sewers; and 3rd, to the contamination of a number of the wells by the contents of the cesspools, which are often as deep as the wells.

The low elevation of the ground had no connexion with Cholera, except when combined with infected water. Westminster had the same elevation as the Borough, and yet the mortality from Cholera was not half so great. Bethlem Hospital and the Queen's Prison had all but escaped Cholera; they are situated in a low level, but have pure water. The Brixton district was chiefly on elevated ground, and yet the mortality there had been high, as a great part of the district was supplied with water got out of the Thames near the Hungerford Suspension Bridge, by the Lambeth Waterworks. In Exeter, in 1832, the greater part of the people were supplied with water, into which, as he had learnt from Dr. Shapter, one of the chief sewers emptied itself. This sewer brought the sewage from the street in which two of the first cases of Cholera introduced from Plymouth occurred; the disease was in a few days scattered through the town, and was very fatal. Since that time, Exeter had been copiously supplied with water quite free from the sewage of the town, and this year there have been but few cases of Cholera, and those chiefly of strangers just arrived from places in which it was prevailing. Hull had also got a new and more plentiful supply of water since 1832, at which time it was scantily supplied with water conveyed from some springs. The new supply was from the river Hull, which receives half the sewage of the town, and which is washed up by the tide past the waterworks, as he had learnt from Dr. Horner. In 1832, Cholera in Hull was confined to the poor, of whom it carried off 300; this year it had assailed all classes, and about six times that number had died, although eight or ten thousand people had left the town to escape from the disease. Certain towns, as Birmingham, Bath, Cheltenham, and Leicester, had almost escaped Cholera both in 1832 and the present year. These towns were supplied with water quite uncontaminated by the sewers. Dr. Brittan had found microscopic bodies in the atmosphere, which he considered to be the same as those existing in the alimentary canal. Others had not succeeded in finding them in the air. If they should be generally found in the atmosphere even of infected districts, they could not, he thought, be the real cause of Cholera; for all the evidence he had collected was opposed to the idea that the cause of Cholera existed in the air.

Dr. Swayne (of Bristol), agreed with Dr. Snow as to the probability of Cholera being primarily a disease of the alimentary canal, and not of the blood. The rapidity with which, when in an incipient stage, it may be arrested by appropriate treatment, would seem to show this; and the fact also, that certain cells of a very peculiar character had been detected, whilst undergoing their various stages of development, in the alimentary canal, would appear to strengthen such a belief.

These bodies, which he would now describe, were first observed by Dr. Brittan and himself whilst engaged as members of a sub committee of the Bristol Medico-Chirurgical Society, in a microscopical investigation of the evacuations of Cholera. They had examined specimens from nearly sixty patients, and had failed to detect the bodies in question in only five or six cases. These, it is true, were unusually severe cases, but this did not, he thought, invalidate their conclusions, for it had been possible to obtain only one evacuation before death; and it had happened in other cases, where these bodies had been found in abundance in subsequent evacuations, that they were wanting in the first motion. The peculiar bodies alluded to were usually found in the matters rejected from the stomach and upper part of the alimentary canal to be very small, and in an early stage of development, and much resembling those which had been subsequently detected by Dr. Brittan in the atmosphere. In the discharges from the lower portions of the intestinal tube, they were much larger and more fully developed, although occasionally the smaller cells were also met with in considerable abundance.

Most of the larger cells thus observed were broken and fissured in certain parts of their circumference, and flattened, as if either from rupture or exosmosis of their fluid and contents; so that it was uncommon to meet with such cells in a perfect condition. However, he had lately had an opportunity of observing cells of this kind in a very perfect state, and of tracing in the same specimen the gradations from this to the imperfect form. [Dr. Swayne showed a diagram exhibiting their peculiar structure.] Their walls appeared to be thick, and studded externally with buds, some of which could be seen to be partially, and others to be completely detached from the parent cell. The cells contained within them a mass of granular matter, which did not always completely fill its cavity, but sometimes left a space around it, which appeared to be occupied by a transparent fluid. When crushed by pressure, these cells gave exit to a number of granules and very minute cells, resembling the smallest-sized cells detected in the atmosphere.

Dr. Swayne then alluded to a circumstance which had been noticed to him by one of the district surgeons in Bristol, and which his own experience had confirmed—viz. *the frequency with which the disease attacked washerwomen and others who had had much to do with the discharges of Cholera patients.* Dr. Carpenter had mentioned to him that he had been informed by an American friend that, at Philadelphia, the proportion of washerwomen among the Cholera patients was so great as strongly to attract attention.

Dr. Williams could not agree with Drs. Swayne and Snow, that Cholera was at first a merely local disease, and that it was occasionally arrested by the use of chalk mixture, etc. Often did we see Cholera patients in a state of collapse, and half dead before the "local" affection of the alimentary canal presented itself; the remedies in question were then of no use whatever; was it to be said, that those cases of diarrhœa, which chalk mixture, etc., cure, were really cases of Cholera? Did not, on the contrary, the treatment usually found most successful in Cholera—the saline treatment of Stevens—militate against the opinion of the local nature of the disease? He did not regard the condition of the water in certain localities as the cause of Cholera; if it were, why had we been free from the disease since 1832, since which time the cause in question had existed. The water bore a mere contingent relation to the disease, nothing more.

Dr. Copland considered Cholera to be not merely a local disease, but an affection of the whole system, directing its chief violence to the alimentary canal. We all know the influence of foul water in producing diarrhœa and dysentery. Sir James Macgregor had referred the dysentery occurring at the siege of Badajoz, to the burial of 20,000 bodies. Dr. Copland thought that if such water were examined microscopically, we should find bodies similar to those described by Dr. Swayne. As to the wells of London, they have been contaminated for centuries; hence the water can only be considered as a *predisposing* and a *determining* cause of Cholera. He was greatly interested in the discovery of the microscopic bodies. He had long been of opinion that the decomposing effluvia given off in infectious diseases might take on special organized forms peculiar to each disease, and had recommended this subject to the notice of histologists some years ago.

Dr. Stewart alluded to an experiment performed by some French physicians, at Warsaw, in 1831, of swallowing some portion of the Cholera stools; and said, that as that was followed by no ill effects, it was opposed to the opinion of Dr. Snow. He considered, also, that Dr. Snow's hypothesis did not account for certain great and sudden outbreaks of Cholera that happened in India, nor the rapidity with which the disease spread in 1832. The Reports on Cholera in Glasgow, lately published in the *Edinburgh Medical and Surgical Journal*, clearly show that the susceptibility of the individual bears no ratio to the exposure to the disease. He though the opinion well established, that the contagiousness of Cholera has a very limited effect in producing its spread.

OCTOBER 20, 1849.

FRANCIS HIRD, ESQ., PRESIDENT, IN THE CHAIR.

ON THE MUSCULAR CONTRACTIONS WHICH OCCASIONALLY HAPPEN AFTER DEATH FROM CHOLERA. By W. F. BARLOW, ESQ. MR. BARLOW first detailed two striking cases in which these movements occurred after death, and lasted a considerable time. The muscles of the arms, chest, and legs, and, in one case, of the face, were observed to be affected, some muscles being much more influenced than others. Some of the movements were not unlike those of volition. In one of the cases, the motions ensued two minutes after death; in the other, a quarter of an hour. In both, the muscles of the lower extremities were first affected, and the movements appeared successively in those of other parts. Two cases, presenting very similar features, occurred long ago, in India. There were local and transient forms of the affection which were more commonly observed; the movements might be confined to the legs, the chest, the face, to a single muscle, or even to certain fibres of it. A case of Cholera was on record in which paralytic muscles had been affected by spasms. These *post-mortem* contractions had been stated, by an observer, to admit of excitement and aggravation by "pricking." The writer had endeavoured, in one instance well calculated for experiment, to repeat the observation, but had been unsuccessful. However, this was only a single experiment, which he desired might be rated at its proper value. He had used, also, water of the heat of 150°, and of a yet higher temperature, in order to discover if the motions could be either induced or affected by it; no definite result could be obtained. These motions had caused terror to ignorant persons, and to persons not ignorant; they had also given rise to unfounded notions of persons being buried alive. Mr. Barlow had no explanation to offer of the cause or causes of these curious phenomena. For the present, they must be viewed as facts. He concluded by proposing a careful inquiry into all the circumstances under which they occurred. Amongst other things, it was important to note their duration, and the most protracted interval which might elapse between death and their commencement.

ADJOURNED DISCUSSION ON CHOLERA. DR. SIMSON hoped that one master-mind would eventually grapple with the entire subject, and throw some light on the very difficult questions connected with the nature and origin of Cholera. The primary cause of the disease still remained as mysterious as ever. He looked on the subject with despair. We found it at Moscow and at St. Petersburg during the intense cold season, whilst at Paris it raged during the hot months—and then, each vaunted his own unfailing remedy.

As to its origin and propagation by water, how could we explain by this cause the appearance of the disease in every part of England an one week? Was Dr. Snow's poisoned water sent in buckets over the empire? The epidemic has rapidly abated; but there has been no improved supply of water. It was clear, from these facts alone, that water was not the chief means of communication. He did not agree with Dr. Snow, that the primary seat of the disease was in the mucous membrane of the intestines, for often the complaint set in with the greatest intensity without any intermediate stage of diarrhœa; and, on the contrary, diarrhœa of a very depressive character might exist, and yet no Cholera supervene. It had been proved, however, by the researches of Dr. O'Shaughnessy and Dr. Garrod, that if the blood were not primarily affected, it became so in the course of the disease; for it had been shown that the blood contained matters which ought to have been thrown off by the secretions; and thus, coincident with reaction, there was often a state of toxæmia. That the blood was so affected was also evidenced by the effects of the injection of salines into the circulation when the patient was in a state of collapse. In his own experience (in the Edinburgh Cholera hospital in 1832, under the late Dr. Macintosh,) this proceeding had always

succeeded in rallying the patient, who died, however, eventually, if the secretion of urine was not restored, but lived when the means of carrying off the poison and effete matters returned.

With respect to Mr. Barlow's very interesting paper, he would remind the Society, that muscular contractions after death were not confined to patients who had sunk from Cholera. Dr. Blake had found that, when he injected bismuth into the circulation, the muscles continued to contract after death; and Sir B. C. Brodie having carried on artificial respiration in a decapitated dog, it continued to tumble about for an hour and a half after its head was off. He had produced the same results also by injecting tobacco into the veins. The irritability of the muscles remained after the death of the brain and nervous system; and, in cases of Cholera, manifested itself in the lower extremities first, as they were the furthest from the nervous centres; and, as the nervous force diminished upwards, so the irritability developed itself towards the great nervous centres. In cases where poisons acted at once on the nervous system, more irritability of the muscles remained, than when death was slower in its process.

Dr. LANKESTER said, that the arguments of Dr. Snow had not convinced him. No "Cholera poison" had yet been demonstrated to exist; and the only approach to it was the announcement of the presence of fungi in the evacuations and vomited matters of Cholera patients, described by Dr. Swayne at the last meeting. These bodies might be divided into two classes—the definite, and indefinite. The latter consisted of all the bodies found in the air and the water, which were probably organic substances of various kinds, and of the smaller bodies from the evacuations and the vomited matters of Cholera patients, measuring from the 1-1000th to the 1-10,000th of an inch in diameter, and which consisted of various organic and inorganic matters. The definite bodies were such as those exhibited by Dr. Swayne at the last meeting of the Society; they were probably from the 1-300th to the 1-1000th of an inch in diameter. Amongst these bodies, Mr. Busk had succeeded in making out three forms. First, there were spores of a species of uredo (*uredo frumenti*)—a fungus which produced smut in corn, and was often found in bread. These bodies only appeared in Dr. Swayne's illustrations. Secondly, portions of vegetable membrane, of a dark colour, which resembled the membranous portions of a grain of wheat, and which were seldom absent from the finest flour, but were very abundant in the coarser kinds. Under a high magnifying power and deficient light, these bodies resembled the last. The third form of these bodies resembled starch granules. The two last bodies were evidently not independent organisms. He had examined Mr. Busk's preparations, and compared them with those of Dr. Brittan and Dr. Swayne; and he felt convinced of the correctness of Mr. Busk's inference, that no new organism had yet been demonstrated to exist in connection with Cholera. All the bodies that had been observed by the microscope were evidently introduced by the food, or were the natural products of the mucous membrane.

Dr. KING referred to a statistical inquiry in which he is now engaged, regarding some of the disputed points in the pathology of Cholera. He regarded the diarrhœa not as a stage of this disease, but as a predisposing cause. He also spoke of the relation which Cholera bore to dysentery. In the present epidemic he had observed "rice-water" evacuations, also dysenteric, and what he had named "*the raspberry jam motion*"—as it could only be compared to thin raspberry-jam. Patients who passed stools of this description, had, in his experience, invariably died.

Dr. JAMES BIRD said, that though ready to admit the affection of the intestinal mucous membrane to be prominently influential in the development of Cholera, yet he was of opinion, from a careful analysis of successive phenomena, that this was only a secondary and progressive effect of the lost vitality of the blood, and of that congestion which followed in the pulmonary

and cutaneous capillaries. He had that evening listened to lucid statements as to the extreme fatality of the disease, and the difficulty of investigating its nature and origin; but he was not one of those who, with Dr. Sibson, "despaired" of seeing a more definite and successful system of treatment introduced—provided the profession, instead of expecting to find specifics for a complicated malady, which admits of none, would zealously seek after pathological facts. In this way, we might hope to ascertain, by induction, the laws which govern the phenomena of Cholera, as well as the principles of a better therapeutic system.

As to the propagation of Cholera, whatever might be its origin, he had good grounds for thinking, with Dr. Lankester, that the disease was occasionally communicable from person to person, under certain conditions; and though he was not prepared to deny altogether the truth of Dr. Snow's views, that it could be multiplied through the medium of water, impregnated with the poisonous dejections of Cholera patients, he could not believe that such medium of communication had more than a partial effect. He had now witnessed the endemic and epidemic outbreaks of this disease, in India, for a period of thirty years; and had come to the conclusion, that while endemic influences of low, damp situations, vegetable and animal effluvia, bad water, imperfect ventilation, and deficient food, acted as predisposing causes in giving rise to this intractable malady among the people, an epidemic atmospheric constitution was necessary for its general diffusion. The atmosphere is the principal medium by which Cholera is disseminated, though the human recipient of the morbific miasm occasionally becomes, as in yellow fever and influenza, a secondary agent in propagating it. That it was so propagated sometimes, even in India, he had every reason to believe. When Cholera was prevailing at Tannah, in 1818, the soldiers of a confined, ill-ventilated barrack-room in the garrison were attacked by it, in succession, as they lay alongside of each other on their beds; and here infection seemed to act a subordinate part in the diffusion of an epidemic disease, not primarily infectious. Such, too, seems the nature of infectious yellow fever, arising out of the endemico-epidemic fever of malarious countries, as that of Sierra Leone, where, as shown by Dr. Bryson's convincing evidence, the infectious fever which prevailed, at different times, on board her Majesty's ships *Bann*, *Eden*, and *Eclair*, grew out of, as it were, the common endemic of the country. Cholera, moreover, in India, is admitted, on all hands, to attach itself to masses of the people assembled at the great religious festivals of that country, and to be disseminated, by them, among persons previously free from it. In the extensive district of deep black alluvial ground, called the Southern Mahratta country, Cholera, in 1841 and 1842, so invariably attacked the Madras regiments marching through it, that it came to be considered endemic there. It appeared to creep from village to village, and was carried, by bodies of religious pilgrims, from district to district; yet, in the face of such strong characteristics of infectious disease, some have endeavoured to explain away the evidence by supposing that a specific poison, the essential cause of Cholera, can lie dormant everywhere till accessory causes give it activity; but when not propagated by human contact, there is no satisfactory evidence to prove that this disease has any other source than a malarious and epidemic origin. He would only make one more remark on the subject of the disease becoming transmissible, under favourable conditions, from the sick to the healthy—namely, that having observed how Cholera continued prevalent among the men and followers of native regiments attacked by it on their march, and allowed, immediately after arrival at a new station, to occupy the regimental lines of native mud huts, he recommended, to the general commanding the division, that all such infected regiments should be encamped in some dry and healthy locality, outside the cantonment, till all traces of the disease had disappeared, after which they were allowed to occupy the regimental huts. This precaution was followed by the happiest results; for,

after its adoption, the men and followers of regiments which had suffered from Cholera on the march, were altogether exempt from it in the lines. A combination of conditions may be necessary for the development of infectious Cholera; but that it is frequently self-multiplying in the human body, is in accordance with fact.

[Ten o'clock—the regular hour for the Society rising—having arrived, some conversation arose as to the propriety of adjourning the discussion, those who advocated that proposition laying stress on the fact, that the treatment of the disease had not been discussed. The President remarked, that the Fellows had properly confined their remarks to the topics more immediately suggested by the papers which had been read. It was then moved and seconded that the discussion on Cholera be resumed at next meeting of the Society; and, as an amendment, it was also moved and seconded that the time for discussion be prolonged for half an hour, to afford Drs. Webster and Snow an opportunity of reply. The amendment was carried by a small majority. The President then announced that, at next meeting, Professor Murphy would read a communication upon the use of *Anæsthetic Agents in Obstetric Practice*.]

Dr. Webster, in reply to questions which had been put to him during the discussion, stated that the water in Bridewell (as also at the House of Correction) was supplied by the New River Company. Diarrhœa had certainly prevailed, both in Bridewell and Bethlem Hospital, during the epidemic, but not extensively. The complaint had been generally very easily checked by a house medicine, originally prescribed by Sir George Tuthill, a former physician to these establishments. It was a draught, for which the following is the formula:—℞. Tinct. opii, m. x; tinct. rhei co., ʒiij; sp. ammon. arom., ʒss; aq. menth. pip., ʒi. M. Other remedies had very seldom been required.

With regard to the observations which Dr. Swayne had submitted to the Society, he thought, when he heard them, that they were very far from establishing the cryptogamic origin of Cholera. The particular organisms had not been shown to be invariably present in the rice-water evacuations; and then, had they been constantly found, it would be necessary, before proceeding to any more remote conclusion, to prove that they were truly the cause, and neither the consequence of the epidemic, nor simply owning with it a common origin. However, Mr. Busk had upset all the Bristol speculations, by correcting the facts upon which they had been reared.

Bad water was undoubtedly very favourable to the spread of the recent epidemic; but, with all respect to Dr. Snow, Dr. Webster could not but regard his water theory as far too exclusive. Dr. Webster referred to a variety of facts, which, he thought, were sufficient to show that water was not the only medium by which the Cholera poison had been communicated. He deprecated all such exclusive views of the epidemic.

Intramural interments were, in Dr. Webster's opinion, the occasion of much disease and death. Looking to the future, the danger seemed terrible; and if the present practices continue, London may again become a city of the plague. If intramural burials go on at the present rate,—viz. about 45,000 per annum,—in fifty years, the enormous number of 2,250,000 additional dead bodies will have been deposited amid the dwellings of the living. Dr. Webster referred to various facts, tending to confirm the opinions expressed in his paper. He concluded by saying, that we must not take a circumscribed or merely *microscopic* view of the recent epidemic, but rather a telescopic range of the subject, in all its vastness.

Dr. Snow said, that the speakers who had made objections to his opinions, had taken an incomplete view of his theory, and had not remembered it in its entirety. He considered that the Cholera poison, which he believed to be contained in the evacuations, was swallowed in two ways; first, with the

food, owing to the persons waiting on the sick getting their hands soiled by the wet linen and bedding; and secondly, in the drinking water, when the contents of drains and sewers find their way into it. He would illustrate these two varieties in the mode of communication of the malady, by alluding to the first cases of Cholera which occurred in London, in the autumn of last year. John Harnold, a seaman just arrived from Hamburgh, where the Cholera was prevailing, was taken ill and died in Horsleydown, close to the Thames; within a week afterwards, a man who came to lodge in the same room was taken ill with the disease, but recovered. This second patient had probably swallowed a minute portion of the evacuations with his food. The ejections and dejections of both of these patients would, of course, go into the river; and within twenty-four hours of the latter one, there was a case of Cholera in Lower Fore-street, Lambeth, where the people obtain their water by dipping a pail into the river. This case was followed in three or four days by others in the same house. About the same time that the first case occurred in Lambeth, there was a case in White Hart-court, Duke-street, Chelsea; where the people had no water, but what they obtained directly from the river. This case became a fresh focus, from which the disease spread in the family and to the neighbours. The next case, after the first of those in Chelsea, was in Harp-alley, Farringdon-street. Now he, Dr. Snow, had seen the people of this alley fetch their drinking water from St. Bride's pump, which had lately been closed at the suggestion of Mr. Hutchinson, Surgeon, Farringdon-street, because the well was found to be contaminated by the contents of a sewer communicating with the Fleet-ditch, up which the tide flows from the Thames. The next cases happened in ships on the river; and the only cases, amongst those occurring at the time to which he was alluding, which could not yet be traced either to communication through the water, or to immediate personal intercourse by which the Cholera poison might be taken with the food, were the two first of a set of cases occurring in Spitalfields. With respect to the alleged swallowing of the Cholera evacuations by the Commissioners at Warsaw in 1831, it might be observed, that there was reason to believe that the Cholera poison was frequently destroyed in the stomach; for every circumstance which diminished the powers of digestion, such as anxiety, fear, and excesses in eating and drinking, was observed during an epidemic to render persons more liable to an attack.

October 27.

Francis Hird, Esq. President, in the Chair.

On the Use of Anesthetic Agents in Obstetric Practice. By Professor Murphy. The author gave an elaborate and lucid account of his experience of chloroform in difficult and natural labour. He had not seen any bad consequences result from its use; though he had no doubt that so powerful an agent might, from one of those inexplicable idiosyncrasies which are occasionally met with, produce mischief in one out of a thousand cases; just as we see a grain of blue pill sometimes occasion hazardous salivation. He had not seen any cases of death, or hæmorrhage in consequence of its use. With reference to the obscene spectacles to which it was alleged that chloroform, when administered during labour, was apt to give rise, nothing of the kind had occurred in his practice, although his patients talked incoherently when under the influence of the drug. He called upon gentlemen to weigh each fact for themselves, and to test them by their own experience, not allowing themselves to be influenced in any way by *ex parte* statements.

Mr. I. B. Brown believed, that when labour went on languidly, a moderate dose of chloroform was far more efficient than *secale cornutum* in producing uterine action. At the same time, the full influence of chloroform retarded labour; and might even, so long as it lasted, induce paralysis of the uterus. He had never seen any indelicate behaviour in patients when under its influence.

Dr. Tyrrell Smith stated, that he had recently been performing some experiments, to illustrate another point in physiology, but which he thought had an interesting bearing on the subject under discussion. He found that the peristaltic action of the intestines and uterus continued in Guinea pigs who were under the complete anæsthetic influence of chloroform. This peristaltic action continued, even after the spinal marrow was crushed or removed. He therefore thought, that although those uterine contractions, which depended on reflex spinal action, might be affected by the modern practice of anæsthesia in labour, yet the peristaltic expulsive action would not be interfered with: and that these contractions were of no mean importance, was evident from the fact, that paraplegic women,—nay, that even dead women,—had given birth to children.

Dr. Snow concurred with Drs. Murphy and Brown, in saying that he had never seen any immoral manifestations in patients under the influence of chloroform. He had administered the chloroform to a number of Dr. Murphy's patients, as well as to others; and his impression was, that the inhalation retarded labour—at least to some extent, because he noticed, that uterine contractions came on, most commonly, just as the effects of the vapour were so far exhausted, as to suggest the propriety of repeating the dose.

Dr. Henry Bennet rose—but the President stated that, as the time was nearly exhausted, the proper course would be to move an adjournment of the discussion till next meeting: and this having been done, was carried unanimously.

Hypertrophy of the Condyles of the Femur, and Disease of the Cartilages of the Knee-joint. Mr. Henry Smith showed a knee-joint, which he had removed. The amputation was performed close to the joint, a large flap being formed of the muscles of the calf of the leg. This operation was, Mr. S. stated, one in favour with Mr. Fergusson, and was very much the method which Mr. Syme had proposed. The enlargement of the inner condyle had existed for six years, and had crippled the patient. The disease of the joint, (causing separation of the cartilages), only came on (as the result of an injury) within the last few months, and it was principally for it, that the limb had been removed.

MISCELLANEOUS INTELLIGENCE.

The Cholera in London and the Provinces ceases to be daily reported, the number of cases being very small. It may be said to have disappeared, in the mean time, from the metropolis. The official report for Saturday, the 27th October, was for London and its vicinity, *no return*:—Scotland, *no return*:—England and Wales, forty-nine cases of Cholera, and twenty-one of Diarrhœa.

Supply of Water to the Metropolis. A feeling has become universal that a better supply of water must be obtained for London, and various projects have in consequence been propounded. The matter is one which Government ought to take up, and private speculation should not be allowed to complicate the measures needed for insuring an abundance of pure water to rich and poor. The Thames ought no longer to be the great sewer, receiving every twenty-four hours no less than thirty millions of gallons of sewage filth, from London and the river-side suburbs of Wandsworth, Putney, Fulham, Barnes, Mortlake, and adjacent villages.

Report of the Cholera Committee of the College of Physicians, on the Discoveries of Drs. Swayne and Brittan. We stop the press to announce the appearance of this document in the *Times* of 29th October. The Committee believe, that the bodies found and described by the above-named gentlemen, are not the cause of Cholera, and have no exclusive connection with that disease.

APPOINTMENTS.

ALCOCK, Dr. Benjamin, appointed Professor of Anatomy in Queen's College, Cork, in room of Dr. CARTE, who has resigned in consequence of ill health.

BENTLEY, Robert, Esq., F.R.S., appointed Professor of Botany to the Pharmaceutical Society of Great Britain, in the room of the late Dr. A. T. THOMSON.

CURLING, T. B., Esq., appointed Surgeon to the London Hospital, in the room of the late J. G. ANDREWS, Esq.

DAY, George E., M.D., appointed Chandos Professor of Medicine in the University of St. Andrew's, in the room of the late Dr. JOHN REID. The other candidates were Drs. G. PATERSON, REDFERN, HARVEY, and R. M. GLOVER.

FERGUSSON, William, Esq., F.R.S., appointed Surgeon in Ordinary to his Royal Highness Prince Albert, in the room of C. A. KEY, Esq., deceased.

LEWIS, Dr. D., elected one of the Physicians to Royal General Dispensary, Aldersgate-street.

LURDO, Dr., appointed Physician to the Bath General Hospital, in the room of the late Dr. TARLETON.

PURNELL, J. J., Esq., appointed Surgeon to the Royal General Dispensary, Aldersgate-street, in the room of SAMUEL SOLLEY, Esq., resigned.

WORDSWORTH, J. C., Esq., appointed Assistant Surgeon to the London Hospital, in the room of T. B. CURLING, Esq., who has succeeded Mr. ANDREWS.

OBITUARY.

APPLETON, J., M.D., late of Greenwich, at Madras, of dysentery, on 26th July.

CURTIS, William, Esq., Surgeon, at Alton, Hants, aged 20, on 18th October.

EDWARDS, James, M.D., late of Canterbury, and formerly of Putney, at North-end Cottage, Fulham, aged 69, on 1st October.

FERRIES, James Cranford, M.D., at his residence, 5, Carlton Terrace, Brixton, Surrey, aged 41, on 3rd October.

GOLDING, Ray Charles, M.D., aged 25, on 16th October.

HIGGINS, Robert, Esq., Surgeon, at Newport, Salop, aged 77, on 14th September.

NICOL, John, M.D., at Inverness, of Cholera, aged 61, on 26th September. Dr. Nicol was one of the most respected and influential inhabitants of Inverness.

PROCTOR, Samuel, M.D., at 7, Norland Place, Notting Hill, aged 64, on 15th October.

TIPPLE, Edwin, Esq., Surgeon, late of Mitcham, Surrey, at Park Terrace, Park Road, aged 65, on 20th October.

TWEEDDALE, James, M.D., Royal Navy, at Adelaide, South Australia, on 24th May.

WALSH, James Wellington, M.D., at Keresceotty, King's County, of brain fever, on 13th Sept.

WARREN, J. Taylor, Esq., Inspector of Military Hospitals, at Brighton, aged 78, on 6th Oct.

WEATHERHEAD, John Rose, Esq., Surgeon, at Wisbeach, on 8th September.

WELLS, Henry, Esq., of Warwick street, Pimlico, in his heroic attempt to rescue some persons who had been suffocated in a foul sewer.

WILLIAMS, Allen, M.D., at Eastbourne, Sussex, aged 32, on 29th September.

WILLIAMS, John, Esq., Surgeon, at Salford, lately.

WRIGHT, John, M.D., at 3, Storey's Gate, St. James's Park, aged 41, on 17th October.

BOOKS RECEIVED.

AMERICAN Medical Ethics. Oxford: 1849. ANNUAL Report of Progress of Chemistry. Part II. London: 1849. BIRD (Dr. Golding) on Electricity and Galvanism. London: 1849. BIRD (Dr. G. G.) on Cholera. Swansea: 1849. BUDD (Dr. W.) on Cholera. 1849. ELLIS's Demonstrations of Anatomy (concluding Part). London: 1849. GROVE on Sulphur in Cholera. London: 1849. MURRAY (Sir James), Electricity as a Cause of Cholera. Dublin: 1849. PERCIVAL's Medical Ethics, 3rd Edition. Oxford: 1849.

NOTICE TO CORRESPONDENTS.

In the next Number, the space required for the Index, and the arrears in the Bibliographical Record and Digest, may oblige us to delay till January several Original Articles destined to appear in this volume. Gentlemen who have intimated their wish to contribute to the volume for 1850, are requested to communicate the subjects of their memoirs as soon as possible.

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A MONTHLY
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DECEMBER 1849.—No. XII.

ORIGINAL COMMUNICATIONS.

ON SUPERFŒTATION.

By ALEXANDER HENRY, M.D.

CASES have, from time to time, occurred, which have induced many physiologists to assert the possibility of a woman again conceiving after she has become pregnant. The phenomenon thus produced has received the name of SUPERFŒTATION; and, although rare, it is worthy of consideration, both from the interest which is attached to it as a physiological occurrence, and from the possibility of its giving rise to medico-legal questions, affecting the reputation or welfare of the individuals concerned. It is not my intention, however, to enter into any discussion on the latter subject; and I will therefore merely quote the words of Capuron in illustration of its possible importance:[1] "Quoique cette question ne se présente pas fréquemment, elle peut être d'un grand intérêt sous le rapport de la médecine légale. Une veuve, après être accouchée d'un premier enfant, peut accoucher quelque temps après d'un second, dont les collatéraux contestent la légitimité, parce qu'ils n'ont aucune idée de la superfétation. Il peut arriver encore que cette veuve se remarie bientôt après ses relevailles, et qu'elle accouche, peu de temps après ce second mariage, d'un second enfant à terme et très-viable. Il s'agit alors de décider auquel des deux maris appartient le second enfant."

I purpose then to confine my observations to the consideration of Superfœtation as a physiological phenomenon. It will be impossible to entirely determine whether it actually took place in all the cases alleged to have occurred; but we may, from a careful examination of these cases, and an impartial consideration of the opinions of the various authors who have written on the subject, be able to draw some probable inferences, while we are at the same time enabled to see more clearly what additional data are required for the perfect comprehension of a subject so difficult of investigation.

The occurrence of cases which gave rise to the theory of Superfœtation was not unnoticed by the ancients. A work *περὶ ἐκτιτρώσκοντος* has

[1] CAPURON, La Médecine Légale relative à l'Art des Accouchemens, p. 99. Paris: 1821.

been ascribed to Hippocrates; Aristotle also, and Pliny, refer to the subject; and Zacchias, in his "*Quæstiones Medico-legales*", says that the occurrence of Superfœtation has been alluded to by the classic writers. In confirmation of this he quotes, among other instances, the narrative of the births of Hercules and Iphiclus from Hesiod; also the passage of Plautus—

> "Nunc, de Alcumenâ ut rem teneatis rectiùs,
> Utrinque est gravida—et ex viro, et ex summo Jove."

It attracted a considerable degree of attention among the physicians who lived two or three centuries ago. One of these old writers, Brassavolus, mentions that he had seen Superfœtation *epidemic*! Haller, in his "*Elementa Physiologiæ Corporis Humani*", enters at some length into the consideration of the question of Superfœtation, and gives an epitome of the cases he had been able to collect. A very interesting and instructive treatise on the subject was published in 1788 by Gravel, in the form of an inaugural dissertation, entitled "*De Superfœtatione Conjecturæ.*"[1] Since that period, Superfœtation has been referred to by most of the writers on obstetric and forensic medicine.

The most usual definition of Superfœtation, is *the occurrence of a new conception, when the cavity of the uterus is already occupied by an embryo.* If, however, we admit with Velpeau the possibility of such an event taking place in an extra-uterine pregnancy, it then becomes necessary to extend the definition, and to consider Superfœtation as *the fertilization of an ovum previously to the expulsion of the embryo which already exists within the body of the mother.*

The cases which I have been able to collect as a foundation for the remarks I purpose making, may be arranged under several heads. A division of the cases of Superfœtation into classes is found in Gravel's thesis. He specifies four kinds of Superfœtation: "1. *Ficta*: quæ aut secundùm leges naturæ videtur impossibilis, aut certùs ob rationes, cùm facta non sit, facta esse contenditur. 2. *Spuria*; quando uno tempore concepti gemelli simul lucem adspiciunt, aut ambobus, aut uno saltem perfectis existentibus, si nimirùm placentæ adhæserint, vel utrasque in eodem utero senserit cauta et experta obstetricantis manus. 3. *Dubiam* ostendit hypothesis sequens: Excludit puerpera infantem omni numero perfectum, quem sponte secundinæ sequuntur; hunc statim, vel etiam modico quarundam horarum intervallo, alius fœtus, immaturus, paucarum ut videtur mensium, excipit. 4. *Veræ* denique superfœtationis idea erit, si mulier post legitimum partum et consuetum lochiorum fluxum, intercedente aliquot dierum, septimanarum, aut etiam mensium spatio, alio fœtu itidem maturo enititur." The third and fourth of these kinds are those most generally recognized. The first seems to be so rare as not to have been made the subject of special notice, while the second is nothing more than twin conception; for the fact of there commonly being a *distinct* placenta for each twin, generally united in one mass, sometimes separated by an interval, is recognized by most obstetric practitioners. May not all twin pregnan-

[1] This thesis is to be found in Halleri Disput. Anatom. Select., tom. v, p. 337. Gottingæ: 1750; also in Schlegel, Sylloge operum minorum præstantiorum ad artem Obstetricam spectantium, vol. i, p. 825. Lipsiæ: 1795.

cies be, in fact, cases of Superfœtation? This is an interesting subject for discussion; but I can merely allude to it here.

Velpeau says[1] that all the cases of Superfœtation can be referred to four divisions:—1. Twin pregnancies, in which one of the fœtuses has died at an early period, and has been retained in the uterus until the expulsion of the other at the full term of gestation. 2. Twins unequally developed, or born at different times. 3. Extra-uterine pregnancies, which have not prevented a natural gestation. 4. Cases occurring in double uteri. 5. He admits also a class of cases which he terms "*Superfœtation proprement dite*", comprising those in which children of different colours have been born.

Velpeau's classification appears very convenient for the consideration of the cases; I propose, then, to adopt it, with some modification, and to arrange the cases in the following order:—

1. Cases in which a dead twin has been retained in the uterus.
2. Cases in which children have been born either
   (*a*) both at the same time, but of different degrees of development; the smaller fœtus being either alive, or very recently dead; or,
   (*b*) where the less perfect fœtus has been retained till it became mature.
3. Cases in which children of different colours have been born.
4. Cases in which a double uterus has been discovered to exist.
5. Cases occurring during extra-uterine gestation.

I. The first class of cases, those in which a dead twin has been retained in the uterus, cannot, I think, be regarded otherwise than as very equivocal examples of Superfœtation. The following are some of the instances.

Baudelocque[2] relates the case of a woman, who, in the year 1772, had a severe fall when advanced four months and a half in pregnancy. This occasioned symptoms of threatening abortion, which were relieved by bleeding and rest. At the full term, she was delivered of two children, one of which was mature, while the other was dead, apparently about five months old; it had undergone scarcely any decomposition. The placenta is described as having been single. Baudelocque attributed the death to the fall.

Dr. Denman[3] gives the case of a female, who went to the ninth month of pregnancy: but, between the fifth and sixth, she met with a great fright, which affected her greatly, and diminished her size. On the 11th of February, she was delivered of a healthy child, but continued in pain; and it was not till the morning of the 25th that she was relieved. On that day, there was born the head and parts of a child that had just the appearance of a miscarriage of four months.

Not to multiply cases of this kind in detail, I will refer the reader to Beck's *Medical Jurisprudence*, seventh edition, p. 159, where a number of references are given. That both the above-mentioned cases were not instances of Superfœtation, is evident from their history; for, in both, a distinct date is assigned to the occurrence of

[1] Velpeau, Traité complet de l'Art des Accouchemens, tom. i, livre 4, chap. 2.
[2] Baudelocque. L'Art des Accouchemens, tom. ii, p. 351. Paris: 1781.
[3] Denman (Thomas, M.D.). An Introduction to the Practice of Midwifery.

symptoms denoting the death of one child, corresponding with its apparent age when born. A dead fœtus may be retained for several months without undergoing decomposition, or but very little; and Baudelocque's case is a good example of this. It may be urged, that this was an example of an arrested twin, and that death took place only a short period before its expulsion; but the coincident circumstances of the case scarcely warrant such a supposition. From the following case, it would even appear that the presence of a dead fœtus in the uterus may not be an obstacle to the conception of another, which may then be considered as a Superfœtation.

Baron Percy[1] relates the instance of a woman, residing in the vicinity of Lagny, who became pregnant in July 1820, for the first time. She felt distinctly the movements of the child about the fourth month, which gradually became more feeble, and at last entirely ceased. In the course of seven weeks from this period, she experienced all the symptoms of a fresh pregnancy; and the nine months of this gestation passed on without any remarkable occurrence. She was attended by Dr. Cochard, of Lagny, and Dame Robert. She had an easy and rapid labour, and was delivered of a small, but lively male child. Soon afterwards, fresh pains came on, during which a number of black, unorganized coagula escaped from the uterus, in the midst of which was a female fœtus, seemingly of the fourth month, and well preserved. The translator expresses it as his opinion, that the second conception took place after the death of the first child.

Haller refers to partial abortion. He states it to be certain that one twin may die, while the other remains in the uterus; and the possibility of such an occurrence is now generally allowed. We are, therefore, justified in rejecting from the catalogue of cases of Superfœtation, nearly all those in which one of twins has died, and has been retained in the womb.

II. The second class of cases is more worthy of consideration, as they have mainly served as the foundation of the difference of opinion, which has prevailed regarding the possibility of Superfœtation. It includes—(*a*) Cases in which two children, of different degrees of development, were born alive at the same time; and (*b*), Cases in which one was retained for some days, weeks, or even months after the other, until it had arrived at maturity. The following are examples.

(a) Simultaneous birth of children of different degrees of development.

Ventura[2] relates the case of a lady, who considered herself as being arrived at the ninth month of pregnancy. During the first four months, she had periodically a moderate sanguineous discharge from the uterus, without pain or indisposition; hence she doubted of being pregnant, until satisfied by the presence of abdominal enlargement and by the movements of the fœtus. As soon as this periodical evacuation ceased, she began to be troubled with nausea, vomiting, inappetency, lassitude, and other symptoms which had not previously affected

[1] Journal Universel, Mars 1823. Translated in *London Medical Repository*, vol. xx, p. 110. 1823.

[2] Ventura, Don Joseph (Cirujáno del Hospital General de la Pasion), Preceptos Generales sobre las Operaciones de los Partos. Parte primera. Madrid: 1787.

her. At the period of parturition, vigorous expulsive pains set in; and the feet of a child presented, apparently of about five or six months. It was baptized, and born alive. While employing friction over the abdomen, Ventura perceived still great size and hardness, and also the movements of a child. This was soon born, and was of the full size. There were two placentæ, corresponding in size with the respective fœtuses.

The next case has some resemblance to that just related. Catherine Fournier Lafond,[1] aged 32 years, tall, thin, and well-formed; the catamenia have always been irregular. In June 1845, they ceased to appear, and certain symptoms induced her to think herself pregnant. At the end of August the menses reappeared on two occasions, at an interval of some days, but their duration was short, and quantity small. She vomited also at this time. The signs became more marked, and the catamenia ceased permanently. On the 28th of February, 1846, pains commenced, which continued all the following day and night. Towards morning, on the 2nd of March, they appeared to diminish. The neck of the uterus was greatly dilated, the waters were slowly discharged, and the uterus became very sluggish. The child presented in a good position. Two grammes of ergot of rye were administered, under the influence of which the pains returned, and a dead child, apparently at the full time, was born. The placenta was soon expelled. Nine hours after the accouchement, she perceived the sensation of a body passing through the vagina, without any pain or great effort. This was found to be a second fœtus, having all the characters of one from four and a half to five months old; with a chord, a placenta still bloody, and membranous envelopes, all perfectly intact and well preserved.

M. Roch-Farbes,[2] of Toulouse, relates the following case. Madame Noël was delivered of a child at full term. Another fœtus, apparently of about six months, was also expelled. It could not suck, but was kept alive a week by means of cow's milk.

Dr. Fahrenhorst[3] gives the case of a woman, who became pregnant in September 1825. Her health was perfectly good during the period of pregnancy, and there was no appearance of menstrual discharge. On the 28th of April, 1826, she was delivered, in the middle of the day, of a fœtus, enclosed in its membranes. After its expulsion, another bag of membranes was perceived; and, during the night, this was expelled. It contained a fœtus, supposed to be of the fourth month. The first fœtus appeared to have been born at the full term.

Pertus[4] saw a woman delivered of a three months' fœtus, soon after which a five weeks' embryo was expelled.

Cases of this kind might be multiplied; but in many, the difference in the age of the twins has not been so great as to lead to any other supposition, than that they were conceived at the same time, or within a few days of each other.

(b) Retention of the second fœtus.

Zacchias[5] gives the case of a woman, whose husband lost his life in

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[1] Gazette Medico-Chirurgicale, Avril 1846, quoted in *Monthly Journal of Medical Science*, vol. vi, p. 144. 1846.

[2] Recueil Periodique de la Société de Médecine de Paris, Tom. v, p. 191.

[3] Rust's Magazine, 1827; quoted in *Medical Gazette*, vol. i, p. 896. 1826.

[4] Revue Médicale, Mars 1838.

[5] Zacchias. Consilia. No. 66.

a quarrel. Eight months after, she was delivered of a deformed child, which died in the birth. Her abdomen remained large, and it was suspected that another infant was contained in the uterus, but all efforts to remove it proved unavailing. A month and a day after, she was again taken in labour, and brought forth a perfect living child. The relations of the husband contested its legitimacy, on the ground that it was a Superfœtation.

Professor Eisenmann[1] relates the following case. Marie-Anne Bigaud, aged 37, was delivered of a living male child, on the 30th of April, 1748. Her delivery was so rapid and favourable, that she was able to return in an hour from the house of the midwife who had attended her, to the military hospital at Strasburg, where she resided. In her two former confinements, the lochia had been abundant; but in this one there was no loss of blood or of fluid, except at the moment of delivery. Her breasts, though naturally large, gave her no trouble, and did not become filled with milk, so that she was obliged, at the end of a fortnight, to provide a nurse for the child. These circumstances, together with her having distinctly felt the movements of another fœtus, and the appearance of symptoms similar to those she had before felt during pregnancy, led her to consult M. Leriche, chief surgeon of the hospital, who ascertained, by manual examination, that she was some months pregnant. On the 16th of September, she was delivered of a living female child, evidently at the full period; after this, she had considerable hæmorrhage, and milk appeared in abundance. The first child lived only two months and a half; the second, a year and two days. After having borne several other children, Marie Bigaud died, in 1755, of an acute disease. Professor Eisenmann made a *post mortem* examination of her body; and, having twice met with double uteri, thought that a similar conformation might exist in this case. The uterus was, however, found to be simple.

Fodéré[2] gives an account of a similar case:—Benoîte Franquet,[3] of Lyons, was delivered of a female child on the 20th of January, 1780, and experienced, after her accouchement, a similar absence of milk and lochia to M. Bigaud. In three weeks, she felt the movements of a fœtus; and her view was confirmed by M. Desgranges, whom she consulted. On the 6th of July, five months and sixteen days after the first, she was delivered of a second full-sized and healthy child. This accouchement was followed by the usual flow of milk and lochia. The children both lived; and, two years after, she made an affidavit of the fact before MM. Caillat and Dusurgey, notaries at Lyons, "not only to testify her gratitude to M. Desgranges, but also to furnish those women who might happen to be in a similar condition, and whose husbands died before the birth of the two infants, with a title in favour of their virtue and of the legitimacy of the second child."

Dr. Maton[4] published the following case:—Mrs. T., an Italian lady,

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[1] De Utero Duplici, etc., auctore G. H. Eisenmann, Anatomiæ et Chirurgiæ Professore. Argentorati: 1752. This case is quoted in most of the works which treat on Superfœtation.

[2] Fodéré. Traité de Médecine Légale et d'Hygiène Publique. 2nd Edition. Paris: 1813. Vol. i, pp. 484-86.

[3] This is evidently the same woman who is described in some accounts as "the wife of Raymond Villars."

[4] Transactions of the Royal College of Physicians, vol. iv, p. 161.

but married to an Englishman who was attached to the Commissariat of the British army in Sicily, was delivered, on the 12th of November, 1807, of a male child, which had every appearance of health. It was brought forth under circumstances very distressing to the parents, being dropped in a bundle of straw, at midnight, in an uninhabited room; and it survived nine days only. On the 2nd of February, 1808 (not quite three calendar months from the preceding accouchement), Mrs. T. was delivered of another male infant, completely formed, and apparently in good health. When about three months old, he died from measles. From November 1807, to February 1808, Mrs. T. had not left Palermo, except on short excursions in her own carriage; and her husband had been constantly with her since the year 1805. He communicated this narrative to Dr. Maton, with a certificate pledging himself to its truth. It was ascertained, from careful inquiries made by Dr. Paris, of Dr. Maton, that both children were *perfect*.

Ventura,[1] in the early period of his practice, attended the wife of a man named Simon Cabezas. She was delivered by a midwife of a child of fair size, which lived seven and a half months; and before the end of five months, he attended her in her confinement with another, which was larger than the first, and lived four years.

MM. Laudun and Bret[2] relate the case of a woman, who, on the 23rd brumaire, an. VI (13th November, 1796), was delivered of a full-grown child. The lochia were suppressed on the fourth day, and there was no secretion of milk. In six weeks, she perceived the movements of an infant; and on the 28th germinal (14th April, 1797), she was delivered of a child at full term. This time the lochia and milk were abundant.

Dr. Mœbus,[3] of Dieburg, relates the following case. A woman, on the 16th October, 1833, was delivered of a living female child of full size; and on the 18th November, of another, also at full term.

Haller[4] refers to the following cases, as examples of Superfœtation.

Birth of a living and healthy fœtus twenty days after another.

Children born successively on 13th June, 24th June, and 10th July.

Interval of forty days between the births.

A smaller child born fifty days after the former one.

Births at the seventh and ninth months (Aristotle).

Births of two children at full term, with an interval of two months.

The movements of one fœtus were perceived two months after those of the other.

Child born three months after the former one.

Children born on the 7th April and 27th July (Fischer); also in September and December; also in April and August; and in April and September.

Birth of a male child, followed on the thirty-fifth day by that of a girl; and this, after a hundred and forty days, by another boy.

A weak fœtus, born six months after the first.

Mature and healthy children, born on the 31st July and 9th February (Bartholin).

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[1] Ventura. Op. cit. p. 92.

[2] Recueil Periodique de la Soc. de Médecine, tom. ii. 1797, p. 381.

[3] Henke's Zeitschrift, Bd. 31, Heft 2.

[4] Haller. Op. cit.

The *Gentleman's Magazine* for March, 1814, relates a case in which a woman was delivered of two boys, and in six weeks of two others.

The cases which I have just enumerated are those which have given rise to the greatest difference of opinion, among those who have treated of the subject of Superfœtation. Some, among whom is Haller, are disposed to consider them as instances, in which a second (or even a third) conception took place during the presence of an embryo in the process of development in the uterus; while others, rejecting this idea, have expressed their opinion that they are merely twins, of which one has been retarded in its growth, and has remained in the uterus until fully developed. And, when we attempt to settle the question by analyzing those cases which have been most fully reported, and which consequently seem to afford us some data for conclusions, we find it impossible to determine which of these opinions is right: for, while some cases may be considered as affording proof of the occurrence of Superfœtation, others can with equal, or perhaps greater propriety, be classed among twin pregnancies. The imperfect manner in which many of the cases are recorded do not enable us to state, with any degree of certainty, under which of these heads they may be placed; but there are, I think, sufficient data in some of them to warrant the conclusion that Superfœtation is possible in certain instances.

The opponents of the doctrine of Superfœtation assert that it is impossible, because the uterine orifices are closed soon after conception, and because menstruation is suspended during pregnancy; and that, therefore, a second impregnation cannot take place. Dr. Allen Thomson, after admitting that sexual intercourse for a few days after conception (most probably previous to the closure of the uterus,) may produce a Superfœtation, makes the following remarks. "Although it may be, that the mechanical obstruction of the decidua opposes an obstacle to the passage of semen upwards, or to the descent of a new ovum into the uterus, there is obviously another cause why Superfœtation should not occur; we mean that fundamental change in the constitution which is induced by pregnancy, similar to that which continues in the majority of women during lactation. But for such a constitutional change, we conceive continual derangement of the function of utero-gestation would attend that process, in consequence of the recurrence of some of the more general symptoms of conception, even though the lodgment of a new ovum in the cavity of the uterus were possible."[1] Dr. David D. Davis[2] believes that the influence of gestation in causing a suspension of the catamenial secretion is universal and without exception: and, notwithstanding the statements of menstruation having occurred during pregnancy, he is decidedly of opinion, "*that genuine menstruation has really never existed during gestation.*" He grounds his assertion further on the argument, that the orifice of the womb is hermetically sealed during gestation; in consequence of which, no description of fluid, whether the produce of the menstrual function or any other, can by any possibility escape out of its cavity without the previous disturbance of the strongly adhesive

[1] Cyclopædia of Anatomy and Physiology, vol. ii, art. GENERATION.
[2] Principles and Practice of Obstetric Medicine, vol. i, pp. 252-3. 1836.

, by means of which nature has closed up the orifice. He
vs that sanguineous discharges sometimes proceed, during preg-
y, from the genital passages; but asserts that, in a great number
ases, they are followed by the expulsion of the ovum. And, as
e few recorded cases of periodical menstruation during gestation,
hinks that they are to be referred to extra-uterine sources, and that
odicity is no proof of their being menstrual.

he occasional occurrence of menstruation during at least the early
ths of pregnancy, has long been admitted; and there are a suffi-
t number of cases recorded by competent observers to place the
ter beyond a doubt. Mauriceau mentions a case, in which a
an menstruated periodically with each child, up to the sixth
th. Brierre de Boismont[1] states, that he has seen five cases, in
h the menses continued to flow for two, three, and four months;
three, in which they continued during the whole period of utero-
ation. Dr. Rigby[2] considers that "the regular appearance of the
ses for the first few months of pregnancy is of such frequent occur-
e, as to place the matter beyond all doubt"; and Dr. Montgomery[3]
erfectly convinced that it sometimes occurs.

dmitting then, as I think we must do, the possibility of men-
ation taking place during pregnancy, we may inquire under what
umstances it occurs? Many of those who admit its possibility
with Dr. Davis, (who denies that the fluid is menstrual,) that
discharge may be furnished by the vessels of the exterior of the
ix and vagina, which assume a periodical catamenial function. It
ighly probable that many cases are of this kind; and that if the
ses flow during the later months of pregnancy they may arise
n the vaginal portion of the uterus; but I think it scarcely
essary to ascribe the flow to an extra-uterine source in all cases.
e uterus may furnish it from its inner surface. In cases of
ble uterus, to which I shall presently refer, the unoccupied cornu
furnish the secretion. As for the plug at the os uteri op-
ing its exit, I do not think this is at all a difficulty; for the
etion may remove an imperfectly formed plug. Ventura[4] makes
e remarks, which, no doubt, contain a deal of truth. "Superfœ-
on can occur in women of very sanguineous temperament, whose
ses are very abundant before conception. In these, the fœtus, in
first months of pregnancy, cannot consume for its nutrition all
blood contained in the uterine vessels . . . Under some circum-
nces, this viscus is compelled to unload itself of the superfluous
od, which it excretes through the vessels of the neck, and through
ny of those of the surface, where the placenta is not adherent.
nce the periodical continuance of the menses for three, four, or five
nths; and, as this cannot take place without a manifest dilatation
relaxation of the os uteri, if at that time cohabitation take place,

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Boismont (A. Brierre de). De la Menstruation considerée dans ses Rapports Physio-
ques et Pathologiques, p. 157. Paris; 1842.
Rigby (Edward, M.D.). A System of Midwifery. 1841.
Montgomery (W. F., M.D.). An Exposition of the Signs and Symptoms of Pregnancy,
Period of Human Gestation, and the Signs of Delivery. 1837.
Op. cit.

there is no doubt that the semen may reach one of the Fallopian tubes, and produce a new conception, which is termed Superfœtation."

The periodical occurrence of the catamenial flow during pregnancy, must be considered as a proof of its being connected with ovarian excitement, and consequently with an aptitude for conception. It evidently obeys the same laws as those which usually regulate the appearance of the menstrual secretion. Dr. Meigs,[1] of Philadelphia, in his valuable work on Obstetrics, published during the present year, thinks that periodical ovarian excitement may go on throughout pregnancy. He says: "The conception does not necessarily put a stop to the periodical development of ovarian ova, nor to their maturation and fall. But a woman who menstruates because of her oviposit, will tend to menstruate at regular periods, though she have conceived in the womb. Some women have this tendency so strongly, that they do actually menstruate during the earlier months of their gestation. The above may serve as an explanation of the very common opinion, that a woman is liable to abortion at periods coinciding with the menstrual effort." (p. 213.) Dr Tyler Smith[2] recognizes menstruation as occurring during pregnancy, especially in the early months. He observes, that "almost all women can perceive the menstrual periods as they pass through utero-gestation, particularly at the first three or four periodic dates. Those who have suffered from menorrhagia or dysmenorrhœa, or in whom organic ovarian disease has existed before conception, recognize the menstrual nisus most clearly; and it is precisely in these subjects" (and at these periods) "that abortion is most likely to occur."

It seems evident to me, then, that the alleged absence of the catamenial secretion (and, by implication, of the ovarian nisus), cannot be adduced as a proof against the possibility of Superfœtation taking place during the earlier period of utero-gestation. The first of these cases related by Ventura (p. 1030), and the one immediately following, tend to support the position I have endeavoured to advance—that Superfœtation is possible, if menstruation occur during the early months of pregnancy. The points most worthy of note are, the occurrence of menstruation subsequently to conception, and the size of the smaller child corresponding, or very nearly so, with the last appearance of the catamenia. It may be objected, that these were cases of unequally developed twins; if so, the coincidences were very extraordinary.

It may not even be necessary that obvious menstruation should take place. Some women have become pregnant, though they have never apparently menstruated: and it is very possible, that the *essential* phenomenon of menstruation—ovarian excitement—may be present to such a degree, as to allow the possibility of Superfœtation, provided that no other impediment exist. The following case, related by Dr. Thomas B. Taylor, of Princetown, Mississipi, U.S., is an apt illustration of my meaning. Clarissa, a negress, the property of Mr. A. Knox, aged about 35 years, in May 1848, was delivered of twins; one a mulatto, and the other a negro child. She had been married several years

[1] Meigs (Charles D., M.D.). Obstetrics, the Science and the Art. Philadelphia: 1849.
[2] Smith (W. Tyler, M.D. Lond.). Parturition, and the Principles and Practice of Obstetrics. London: 1849.

negro man on the plantation, of delicate constitution, and had had al children by him. Her menstrual discharge had occurred for al months previous to her pregnancy, at the full of the moon. She herself pregnant by her customary signs, about the middle of the th; and, to confirm her suspicions, at the next period the menses ot appear. About three weeks from the time she first felt that had conceived, and one week after her menses had failed to appear e regular period, she had sexual intercourse *once* with a white man. irth, the mulatto child bore marks of being at least three weeks ger than the negro; thus sustaining the woman in her supposition, the time between the two conceptions.[1]

his case appears to me a most conclusive one: for there can be no t that the second child (the mulatto) was the product of a second eption, at the first menstrual period during gestation, when, though e was no apparent flow of the catamenia, the aptitude for conception remained in force. The different colours of the children, and in the whole circumstances of the case, render it highly improbable it was a mere case of unequal twins.

somewhat similar case was mentioned by M. Chevroin,[2] at the ting of the Academy of Medicine of Paris, September 20, 1842. A ess, at Guadeloupe, was delivered of a black child, and, after an in al of three months, of a mulatto.

exual excitement, during pregnancy, is a recognized cause of abor. It probably operates, in many cases, by means of the increased ian excitement which it produces, especially if it take place at the menial periods. But it does not follow that, in every case, abortion he necessary consequence: and I think that, whenever there is a sical or physiological possibility of Superfœtation, several varieties ircumstances may be induced.

. Abortion may occur, either through irritation of the uterine or nal nerves, or through increased ovarian excitement. If a second m have been impregnated, and have descended into the uterus, it be also expelled.

. The abortion may take place before the descent of a second ovum, ch thus is removed from danger, and is capable of being developed hwith in the uterus.

. The excitement may fail to act on the uterus so as to call its alsive powers into action, while a second impregnated ovum may cend into the womb, and there be developed. This would form a case of Superfœtation; and I think that, although of rare occurce, it is far from being impossible.

These remarks are founded on the supposition, that there may be mechanical impediment, from closure of the os uteri or of the orifices the Fallopian tubes, to the fecundation of a second ovule. But bably, in many cases, the mechanical impediments at the uterine ices render a second conception in the human subject impossible. is is evidently a wise provision of nature against the continued fer zation of ova, and their descent into the uterus, during gestation.

[1] New Orleans Journal, November 1848; and American Journal of the Medical Sciences, il 1849, p. 549.

[2] Gazette Médicale de Paris, 1842, p. 622.

If it were not so, we might expect Superfœtation to occur much more frequently,—provided that abortion of the already existing embryo were not induced.

Another explanation of the cases of alleged Superfœtation, and one which is probably correct in a large number of instances, is that a twin has been arrested in its growth. It may then either be expelled at the same time with the mature fœtus, or it may be retained until it have arrived at its full development. In the latter case, why are not both expelled together? To answer this question, we must be acquainted with the exciting cause of parturition. If this be the return of the ovarian nisus, at a catamenial period, then why does not the expulsive power of the uterus produce the abortion of the imperfect embryo, as well as the normal delivery of that which has arrived at maturity? If, on the other hand, we recognize the condition of the fœtus and placenta as an accessory circumstance, having an influence on parturition, then there is some reason for supposing that this cause operates in the retention of the smaller child, especially if it have arrived at a period of development in which the danger of abortion is diminished. This reasoning will equally apply to the cases, in which there is every probability that Superfœtation has taken place.[1]

It is difficult to form a diagnosis between cases of retained twin and of true Superfœtation, though several authors have attempted to do so. Gravel states, that they may be distinguished:—1. By twins being of equal size at first, but afterwards becoming unequal, as one grows more than the other. 2. By the movements of the smaller twin being much more obscure than those of the other, while, in Superfœtation, the movements of the second fœtus are strong, and gradually increase. Fodere lays down the following distinctive marks:—1. The second child, in Superfœtations, is usually larger and more healthy than the first. 2. Twins have generally a single placenta, while the product of Superfœtation has its placenta distinct from that of the other child. 3. There is a great interval, in the cases recorded, between the births of the children. He denies that *a twin* may be retained more than a week or two. I do not think that the data given by Fodere can be depended on as means of diagnosis. It would be very difficult to prove that the second twin may not attain greater size and strength than the first, if it be retained for a sufficient length of time, in its favourable circumstances of increased space, and possibly of increased supply of aliment. Fodere lays great stress on the cases of Bigaud and Fraunquet, in which the lochia and milk were suppressed until after the birth of the second child, as affording proofs of Superfœtation. But it is not unlikely, that this retention was an expedient of nature, to preserve a sufficient quantity of nutritive matter for the retained fœtus, whether a twin or not: and if the aliment be so carefully retained, we can see why the second twin, as well as the product of Superfœtation, may be larger and stronger than the first. As to the placenta: twins have not always a single placenta, but separate ones, attached to different

[1] Gravel has a very curious idea as to the cause of the retention of the second fœtus. "Cui vis uteri contractilis non ultimum operi munus adjungat? Scilicet tum demum infanticidium abhorrens anima, relicto in pineali glandulâ throno, ad uterum descendit, et embryonem prehensâ manu detinet, dum fœtum perfectum calcibus foras extruderit."

ons of the uterus. If there be a single placental attachment, the ability of the two fœtuses being expelled at the same time is in- sed,—though this is not a necessary consequence.

he cases related by Ventura and by Dr. T. B. Taylor, are instructive rnishing data for diagnosis. In both of these, the coincidence be- n the apparent age of the smaller child at birth and the supposed of its conception, is too striking to be considered as merely dental. The different colour of the children in the last case is an tional proof. But we have not always the data furnished with such racy; and we can only conclude, with Orfila,[1] "that the physician sulted in such cases, should admit the possibility of Superfœtation, state, at the same time, that it is very difficult to distinguish this a abortion, or from twin pregnancy".

II. There is another class of cases, which prove the possibility of a nd conception taking place at an early period: viz., those in which children have been born of different colours. One of these I have ady related at page 1096, as it had a bearing on the subject there ler consideration.

A case is related by Buffon,[2] of a woman at Charlestown, in South rolina, who was delivered, in 1714, of twins, within a very short time each other. One was found to be black, and the other white. This iety of colours led to an investigation; and the female confessed, t, on a particular day, immediately after her husband had left her, negro entered the room, and, by threatening to murder her if she did consent, had connexion with her.

Dr. Moseley[3] mentions the following as occurring on Shortwood tate, in the island of Jamaica. A negro woman brought forth two ildren at a birth, both of a size; one of which was a negro, and the her a mulatto. On being interrogated as to the occasion of their ssimilitude, she said, that a white man belonging to the estate came to r one morning, and she suffered his embraces almost immediately after r black husband had quitted her.

Dr. Turton[4] attended a negress, named Maria Johnson, who was livered of a black child at the eighth month, which lived two hours. fter some hours, a four months' white fœtus was expelled. This, ough a possible, is but a doubtful case of Superfœtation; for the naller fœtus may have been a negro, which had not yet acquired lour.

Mr. Richard Dick[5] related the following case. A negro woman, an pprentice on Orange Park Plantation, in the parish of St. David, amaica, was, on the 12th of December 1834, delivered of two male ildren, one of which was a fair mulatto, the other a negro, both of hich lived. The woman denied having had any intimacy with a white an.

[1] Orfila, Traité de Médecine Légale. 4me Edition. Paris; 1848.
[2] Quoted by Fodere, vol. i, p. 482; by Beck, p. 160; etc. This case seems to be inaccu- ately reported; for one of the children should have been a mulatto.
[3] Moseley on Tropical Diseases, p. 111. Quoted by Beck.
[4] London Review, No. 16, 20th October, 1823.
[5] American Journal of the Medical Sciences, vol. xvii, 1835, p. 188, quoted from *Jamaica Journal*.

Dr. Holcombe,[1] of West Granville, Massachusetts, was acquainted with female twins, eight or ten years old. One was a well marked negro, the other a mulatto, presenting less than usual of the negro appearance. The mother, a negress, confessed having had intercourse with a white man. The black child had a strong family resemblance to the black father. All the other children of the family were very black.

A married woman, aged 22, was brought to bed of twins in the Lying-in Hospital at Berlin,[2] on the 25th of January, 1832. The children were both girls, and died in two hours after birth, which took place before the end of the seventh month. One child was white, the other evidently a half-caste, as was indicated by the shape of the head, and the leaden tinge of the face, hands, and feet, which in colour resembled those who have been tinged by taking nitrate of silver in large doses. The same difference of colour was strikingly exemplified in the umbilical chords of the infants, but not in the membranes or placenta. On enquiry, it appeared that she was in the habit of intimacy with a negro, shortly after, or at the time, when she had conceived by her husband.

Dr. Dewees[3] has related, that a servant in Montgomery county was delivered of a black and a white child at one birth. He states also, that on the report of the pregnancy, both a black and a white man disappeared from the neighbourhood.

Dr. Elliotson[4] relates, on the authority of Mr. Blackaller, of Weybridge, the following case. A white woman, of very loose character, left her husband, and some time after, returned pregnant to the parish, and was delivered in the workhouse of twins, one of which was of a very dark colour; the hair quite black, with the woolly appearance usual to negroes, with flat nose and thick lips. The other had all the appearances common to white children.

Dr. Dunglison relates,[5] that one of his pupils, Mr. N. J. Huston, of Virginia, communicated to him the particulars of the case of a female, who was delivered, in March 1827, of a negro child and a mulatto on the same night.

Several similar cases are referred to in the foot-note at page 160 of Beck's *Medical Jurisprudence*; and Dr. Dunglison has observed, that, "where negro slavery exists, such cases are sufficiently numerous".

A very remarkable case is related by the Rev. Dr. Walsh,[6] which was communicated to him by the Sargente of San Jose gold district (Brazil). A Creole woman had three children at a birth, of three different colours, white, brown, and black, with all the features of the respective classes.

These cases prove the possibility of a second conception taking place soon after the first. In several of them, the confessions of the women serve to remove all doubt. The ovum first impregnated had probably not descended, nor had the uterus been placed in a condition to oppose

[1] Boston Medical and Surgical Journal, vol. xiii, p. 61.
[2] Dublin Journal of Medical and Chemical Science, quoted in *London Medical and Surgical Journal* for 1834.
[3] Philadelphia Medical Museum, vol. i.
[4] Notes to Blumenbach's Physiology, p. 485.
[5] Dunglison's Physiology, vol. ii, p. 324.
[6] Walsh (Rev. Dr.). Notices of Brazil, vol. ii, p. 90.

bstacle to further fertilization. There may be something, too, in difference of races. In some animals, the impregnation of the le, near the same time, by males of different breeds, has produced ring resembling each of the male parents. It is very difficult to nguish such cases of consecutive conception from twins. If a an conceived of children, after cohabiting successively with two men r own colour, the offspring would doubtless be considered twins, e strictest sense of the term, unless a strongly-marked paternal mblance gave room for a different opinion.

V. In the foregoing cases, I have reasoned as if the uterus were le. But the presence of a Double Uterus has been much insisted on xplanatory of the doctrine of Superfœtation; and, it is not improba- that in several of the cases to which I have referred, this peculiarity ructure existed; though, in some, as in that mentioned by Professor nmann, the cavity of the organ was single. This malformation ns to be of not unfrequent occurrence; and several writers have rded a large number of cases in which it existed. Dr. Cassan, of is, in the year 1826, published a thesis entitled *Recherches sur les d'Uterus Double et de Superfétation*. Voigtel, in his *Handbuch Pathologischen Anatomie*, gives a copious list of cases; and Madame vin, and Professor Rokitansky, have observed this structure in a ty large number of subjects. It has, like most other malformations rgans, its analogue in the lower classes of mammalia. Dr. Rigby[1] s a good summary of the different forms of the uterus in animals. he nearest to the tubular uterus, and where the transition from the luct in birds, etc., to the uterus in mammalia, is least distinctly ked, is the *uterus duplex*. Although the uterus is double, there is one vagina into which the two ova uteri open; there are as yet no es of a cervix, each os uteri merely forming a simple opening, at lower end of what is little more than a cylindrical canal. We do find that thickening at the lower extremity of the uterus which tinguishes the cervix in the higher mammalia. This species of rus is found among a large portion of the rodentia, and is also occa- nally met with as an abnormal formation in the human subject. The t grade of uterine development appears under the form of the *uterus ollis*. The double os uteri here ceases to exist, and the division gins a little higher up, so that the two cavities of the uterus commu- ate for a short space; the ova, however, do not reach the common ity, but remain each in its separate cornu. In this form of uterus, os uteri is not only single, but the lower portion is thickened, hough it has not yet formed a distinct neck or cervix; it is met with ong some of the rodentia, and also certain carnivora.

"In the *uterus bicorporeus*, the union of the cornua is higher up, so t the lower portion is single, while the upper part alone is double, sisting of two strongly curved cornua. This formation is peculiar to minating animals. If two ova be present they are separate from each er, each being contained in its own distinct body or cornu, but a rtion of the membranes extends along the common cervix, from one dy to the other.

[1] Op. cit., p. 15, 16.

"A still higher grade is the *uterus bifundalis*, where the fundus alone is double, the cornu being formed only by this portion. This formation is observed in the horse, ass, etc.: the common cavity is here the receptacle of the ovum, so that in the impregnated state, the cornua appear only as appendices, into which a portion of the membranes extend.

"In the *uterus biangularis*, the double formation has nearly disappeared, except at the fundus, where the uterus imperceptibly passes into the tubes: this is the case among the edentata, and some of the monkey tribes.

"The highest grade is the *uterus simplex*: every trace here of the double form is lost; the fundus no longer forms an acute angle, where it bifurcates into two cornua; but is convex. We now for the first time see the divisions of the uterus into body and cervix distinctly marked.

"The human uterus presents a similar variety of forms, as it gradually rises in the scale of development during the different periods of utero-gestation. It is at first divided into two cornua, and usually continues so to the end of the third month, or even later; the younger the embryo the longer are the cornua, and the more acute the angle which they form; but even after this angle has disappeared, the cornua continue for some time longer."

The term *double uterus* has been objected to by Drs. Robert Lee and D. D. Davis, on account of there being but one ovary and one Fallopian tube to each division. It seems, however, convenient to retain the term, as comprehending all the cases in which the uterus consists of two distinct cavities. Dr. Davis thus classifies them after Voigtel:[1]—"Either there is one uterus, with a single uterine aperture and one vagina, the space alloted to the uterine cavity being divided into two parts by a distinct membranous septum; or the body of the womb is found to consist of two parts perfectly distinct and separate from each other, but uniting in a common aperture into a single vagina; or there are two uteri distinct and separate throughout, each having its distinct opening, and each communicating with its appropriate vagina".

In those animals in which a double uterus exists, Superfœtation is stated to be of common occurrence, *e. g.* in the hare and other rodentia. It is somewhat remarkable, that although Superfœtation in the human female has long been supposed to be closely connected with this peculiarity of structure, but few cases have been recorded in which these were actually discovered *to* co-exist. We may then inquire, whether there are any inherent circumstances in the existence of a double uterus, which show the probability of its becoming the seat of a second conception.

Does menstruation occur in the empty cornu? Cassan says, that this idea is opposed to his observations. Dr. Oldham,[2] in his recent report on a case of labour complicated with a double state of the internal sexual organs, says, in speaking of double uterus, "However the sexual passages may appear to be double, and the one side physically independent of the other, yet they appear to me to be as one organ in

[1] Op. cit. p. 514.

[2] Guy's Hospital Reports, October 1849.

physiological relations; and the best proof of this is to be found
e manner in which menstruation is performed. In this there has
nothing erratic, and we may infer that both wombs menstruate at
same time; and what, perhaps, is still more to the purpose, when
womb has contained a fœtus, the other has ceased to menstruate,
with this suspension it loses, I believe, its aptitude for impregna-
. Our knowledge of the physiological relations of symmetrical
ns, would naturally lead us to infer the simultaneous performance
e catamenial function by both cornua of the divided uterus. But, as I
already stated, menstruation is sometimes known to occur during
nancy, in common cases; and the ovarian stimulus is perhaps often
e active than we are aware of, though the presence of a fœtus has
cient influence to prevent any obvious indication of it. Now it is
likely, that the empty cornu may, in cases where the ovarian ex-
nent is sufficiently powerful, continue menstruating as long as the
lency remains in the other; and if so, then there is a possibility of
occurrence of Superfœtation. In a case related by Dionis, in 1681,
double uterus, in one cornu of which a fœtus had been formed,
struation was stated to have occurred during the first four or five
ths of pregnancy.

r. Robert Lee[1] has founded an objection to the possibility of the
rrence of menstruation or Superfœtation in a double uterus, on the
nation of a decidual membrane in the empty cornu. In a case
ribed by him, the body of the uterus was cleft from fundus to
ix, so as to form two lateral halves. The right cornu had contained
etus, and resembled the uterus a week after delivery; (the woman
died eight days after her confinement). The right ovary was much
er than the left; and the latter presented no corpus luteum. The
uterine cornu was of the size of an unimpregnated uterus. Its
etes were very soft and vascular; and the inner surface was every-
re coated with a delicate and beautifully-formed deciduous mem-
ne. At the opening of the cornu into the cervix, the deciduous
nbrane formed a short sac; but it presented a smooth circular open-
at the uterine orifice of the Fallopian tube. The fibres of this
nbrane, as they approached the opening of the tube, ran in a con-
ing direction, and passed into the opening, leaving it completely
ious. The distance to which the fibres extended into the tube was
ascertained, nor was it positively determined whether the whole
nt of the canal were open. There are some circumstances, how-
h seem to me to throw a doubt over the fact of the decidual mem-
ne in the empty uterus having been formed during pregnancy:
e are, its delicate structure, its not having been discovered till eight
s after delivery, and the woman having died from peritonitis. In
r records of cases of pregnancy occurring in double uterus, I have
found it mentioned, whether or not the empty cornu was lined by
membrane. It may be formed in some cases, and may have existed
ng pregnancy in Dr. Lee's case, as supposed by him. But even
, Superfœtation must be admitted as possible, if we believe in its

[1] Medico-Chirurgical Transactions, vol. xvii. 1832.

occasional occurrence in a single uterus, while containing a fœtus and decidua. There is not, then, I think, any physiological reason why Superfœtation should not take place in a double uterus; and an examination of some cases which have been recorded, will serve to confirm the view which I have taken of the possibility of the occurrence. I would remark, however, that it is not to be supposed, that an aptitude for secondary conception exists in all women who have a double uterus; it will be in those only, in whom the ovarian nisus is sufficiently active, either with or without the actual occurrence of the menstrual flow.

Marquet[1] relates, that at the post-examination of a woman who died of phthisis, a double uterus was found, resembling two inverted pears, united by their neck, terminating in a common orifice. She had had fourteen abortions, always accompanied with uterine hæmorrhage and other alarming symptoms. On one occasion, she brought forth twins, with a single placenta, at four and a half months; and in a month after, was delivered of a fœtus, apparently of six weeks' growth.

Cassan[2] has recorded the following case, which occurred to Madame Boivin. A woman was delivered, on the 13th of March, 1810, of a female infant weighing four pounds. The abdomen still remaining bulky, Madame Boivin introduced her hand, but could find nothing in the uterus, which was already much contracted. But the examination, and the occurrence of fœtal movements during the next two months, led Madame Boivin to infer, that there must be either an extra-uterine pregnancy, or a Superfœtation in a bilobed uterus. On the 12th of May, another female infant was born, weighing about three pounds, feeble, and scarcely able to breathe. The woman said that she had had no connexion with her husband for some time, except on the 15th and 20th of July, 1809, and on the 16th of September.

Dr. Dugès[3] has related a case, communicated by a pupil of the Maternité at Paris. A woman, in her seventh pregnancy, aborted in the fifth month of a dead fœtus, eight inches and a half long, which was followed by an embryo, about three inches and a half long, apparently of the third month, shewing some signs of life. The two placentæ were discharged separately: they were of different sizes. On careful examination with the hand, the vagina and cervix uteri were found to be natural; but beyond the exterior opening of the latter, there were two orifices, each leading to a distinct uterus.

Dr. Geiss[4] has recorded a case, which, although deficient in some details, must be considered as a probable instance of Superfœtation. During his attendance on a lying-in patient, he observed, that the pains were entirely limited to the right side of the uterus, and that this side was elevated as high as the thorax, the left only extending to the umbilical region. On examination, the shoulder of a fœtus enclosed in its membranes, was distinctly felt. Immediately after the birth of this child, the right side of the abdomen diminished in size, while the left side remained in the same condition as before. In about an hour,

[1] Marquet. Traité pratique de l'hydropisie et de la jaunesse.

[2] Cassan. Recherches sur les Cas d'Uterus double et de Superfétation. Paris: 1826.

[3] Journal des Progrès, vol. xiii, from Ephemer. de Montpellier. *London Medical and Surgical Journal*, 1830, p. 172.

[4] Rust's Magazine, quoted in *London Medical and Surgical Journal*, vol. ii, 1829, p. 259.

our pains returned; and Dr. Geiss discovered, on examination, ound the orifice of the uterus, a membrane distended with fluid, pro- ing through an annular aperture in the left side of the uterus. The bilical cord of the infant born was traced to the upper part of a inct cavity. On further examination, the abdomen of a child was inctly felt at the opening. Turning was found necessary, as with former child: it was accomplished with some difficulty. Dr. Geiss roduced his hand, and convinced himself that the organ was divided. e placenta in the right half of the uterus was first thrown off, and s part of the organ contracted vigorously; but, in the detachment of second placenta, the contractions were feeble, and the woman lost ch blood. She ultimately recovered. Two years before, she had n delivered of a single infant, after a very difficult labour.

Billengren[1] relates the case of a woman, forty years old, who, after ing uterine hæmorrhage for eight days, was delivered of a fœtus h its membranes, apparently not more three months old. A second us, of above seven months, was in the evening extracted by means of forceps, but soon died. The uterus was divided by a septum into cavities, each of which contained a placenta.

A very remarkable case, which places the connexion of Superfœtation h double uterus beyond a doubt, has been lately recorded by Dr. nerali[2]. Gaetana Bovatti, of Modena, had had six pregnancies. r labours, though successful, had always been difficult, requiring use of instruments. In 1816, she was pregnant for the seventh e; and there was remarkable, along the median line of the uterus, a ll-marked furrow, which caused a double pregnancy to be suspected. the 15th of February, 1817, she was delivered of a living male ant, apparently at the full period. The placenta was expelled in the tural manner: there was no lochial discharge. The abdomen was luced in size on only one side, and the movements of a fœtus were tinctly perceived on the other. On the 14th of March, she was ain seized with labour pains, and was delivered of a second male ant, of equal development with the first. The first of these lived ty-five days, the latter fifty-two days. In 1822, she was delivered, the last time, of a female child, who still lives. This case created a eat sensation: and Professor Bignardi regarded it as an instance of perfœtation, due to an abnormal conformation of the uterus. In ptember 1847, the woman Gaetana Bovatti died of apoplexy. Dr. nerali examined the uterus, and found that it possessed the structure, existence of which had been suspected by Professor Bignardi. The ck of the uterus was of the usual form; but the body of the organ s divided into two parts, each of which was furnished with a Fallopian be. This interesting specimen of teratology has been deposited in e anatomical museum at Modena.

These cases may possibly be doubted to be instances of Superfœ- ion. It may be said they were cases of arrested twins; but a careful amination of the phenomena which they present, will, I think, serve

[1] Svenska Läkara Sällskapets Nya Handlingar, Band ii. Quoted in *Neue Zeitschrift für Geburtskunde*, 1846, p. 147.

[2] Bulletino delle scienze Mediche di Torino.

to establish the probability of the occurrence. We may then conclude, that Superfœtation may take place, and has done so, in cases of double uterus. But, even including many of the cases in which no double uterus is mentioned, as if the organs were in this condition, the proportion of cases of double uterus with Superfœtation is but small, compared with those in which it has been accompanied with single pregnancy. It may be that, in some cases, as I have already observed, the ovarian excitement, or menstruation, may not be present; or, in others, there may be a mechanical obstacle to the fertilization of the second ovum. But there is another circumstance, which may operate in reducing the frequency of Superfœtations in double uteri; and that is, the abortion of the fœtus already present, where an attempt is made at impregnation. In Marquet's case, the woman had aborted fourteen times; and, in other cases in which a double uterus has been found, there has been abortion. This may have arisen in part from circumstances connected with the abnormal structure itself, which have caused the presence of double uterus to be looked on as a source of danger. Orfila[1] particularly notices the danger, and calls attention to the fact, that a large number of the women who have conceived in one of the cavities of a double uterus have died at, or soon after delivery. In other cases, the labours have been difficult. I do not, however, purpose to enter here on a discussion of the dangers attending on a double uterus in the human subject.

V. The next class of cases, to which I shall refer, comprehends those in which pregnancy has taken place during extra-uterine gestation. The following are instances.

Dr. Cliet, of Lyons,[2] found in the body of a woman, who had had several children, and had died suddenly, a male fœtus of about five months, lying in the right iliac fossa. The uterus contained another, of the male sex, of about three months.

Dr. Montgomery[3] relates a case, in which a woman was the subject of an extra-uterine pregnancy for three years, during which time she bore three children. The extra-uterine fœtus was at length expelled through the walls of the abdomen, near the umbiliary.

Several similar cases have been recorded, which prove the possibility of the occurrence; and seem to show that if the ovarian nisus be suspended for the usual period of utero-gestation in such cases, it is resumed when the usual time of delivery returns. As to the formation of a decidual membrane, Dr. Robert Lee has not found it; Chailly says, that it is present; and Dr. F. H. Ramsbotham thinks that it is formed, but is expelled. In any case, it cannot be an obstacle to conception.

The difficulties attending on the investigation of the subject of Superfœtation, and the imperfect records which have been given of many of the cases, prevent us from arriving at any fixed and ultimate conclusions. I would, therefore, not be understood as attempting to determine all the disputed points connected with it, especially the diagnosis between the true cases of Superfœtation, and those in which a twin

[1] Orfila, Op. cit. [2] Nouveau Journ. de Médecine. Dec. 1818.
[3] Op. cit.

been arrested in its growth. An extended series of observations equired; and, as the cases are but rare, it will probably be a considerable time before all the facts connected with Superfœtation are wn. A careful reflection on the cases which have been recorded, es in my mind no doubt of its having actually occurred, both re the uterus has been of the usual form, and where it has been ble, or bilobed. It may take place during the first days of pregcy, before the formation of the uterine plug; and also subsequently, in a limited period, if this plug have been removed by any cause, ided that the necessary ovarian nisus be present.

sex House, Putney, November 1849.

PERIMENTAL AND PRACTICAL OBSERVATIONS ON THE USE OF CHLOROFORM IN MIDWIFERY;

AND ON THE INFLUENCE EXERTED BY THIS ANÆSTHETIC UPON THE MOTOR POWERS CONCERNED IN PARTURITION.

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M not aware that any experiments have been performed, with a y to decide upon the influence of Chloroform on uterine muscular on. The following is a contribution to this interesting subject, and , perhaps, tend to throw some light upon the physiological relations hloroform to Obstetric practice. Chloroform promises to be a great n to the experimentalist, since it renders the most formidable vivision as painless as dissection after death. It must, however, be ne in mind, that from the intense action of this agent upon the vous system, it is extremely liable to complicate any nervi-motor eriments in which it may be employed. But this objection does apply to experiments upon the action of Chloroform itself upon the vous centres. In experiments of this latter kind, we can witness action of Chloroform without the disturbing influence of pain; in other experiments, we certainly lose the interference of pain and all results, if we employ Chloroform, but we inevitably have a certain ount of derangement of the nervous functions from the anæsthetic. present object is not so much to deal with the question of the priety or impropriety of Chloroform in midwifery, as to inquire, how loroform acts towards the motor powers concerned in natural partion, and in the accidents of the parturient and puerperal state dident upon an abnormal condition of those powers? I would wish consider it impartially, not as a poison, or as an agent with power to y the agonies of surgery and obstetrics; but as a medicine capable modifying the motor powers of the uterus, upon the integrity of which e and natural parturition depends.

Observation I. A guinea-pig being placed under the influence of loroform, the effects were carefully observed in the uninjured animal. first, the breathing became hurried and increased in vigour, and the bs, particularly the posterior extremities, were convulsed. When

the limbs were pinched, they were smartly retracted by reflex action. It was evident that, as a first effect, the function of the spinal marrow was *exalted*. This appears to agree very well with the opinions of numerous observers, to the effect that when parturient women are lapsing into, and recovering from, the anæsthesia of Chloroform, the pains of labour are somewhat increased in power.

Observation 2. After a few minutes, the respiratory movements diminished in force and frequency, becoming chiefly diaphragmatic. The limbs remained stiff, even when pinched or pricked, so that neither *sensation* nor *reflex* motor action remained. Everything now indicated that the energy of the spinal function was *diminished*. When the Chloroform was pushed to a further extent, the sphincters of the rectum and bladder were relaxed, so as to allow of the escape of their contents, and all the muscles of the body appeared loose and flaccid. This appears to agree with what is observed in the obstetric use of Chloroform,—namely, that the muscles of the outlet of the pelvis, and the vagina, are all relaxed (though the relaxation may not reach to the extent of allowing the urine and fæces to escape), the expulsion of the fœtus being thus considerably facilitated.

Observation 3. The spinal marrow being divided in the dorsal region, while the animal was in deep anæsthesia, and the abdomen laid open, a stilet was passed down the spinal canal, so as to destroy the lower portion of the spinal marrow. In ordinary circumstances, violent movements of the limbs attend the laceration of the spinal cord, but here, no movements whatever occured. Thus the *direct* as well as the *reflex* motor actions were annihilated.

Observation 4. It was observed, that notwithstanding the destruction of the spinal marrow, the uterus, and the rectum and colon, were affected with vigorous peristaltic action, under the stimulus of the air, pricking with a needle, caustic, potash, etc. The guinea-pig is remarkably well adapted for observing the uterine peristaltic action; as even in the unimpregnated state, the cornu and body of the uterus are abundantly muscular, and endowed with peristaltic action.[1]

Observation 5. When the Chloroform had been continued sufficiently long to annihilate all the other reflex actions, imperfect acts of respiration still continued. The thorax and the neck being laid open, the *nares*, the *larynx*, and the *diaphragm*, were seen to move simultaneously from time to time, as in inspiration. These organs, associated together by the *facial*, *laryngeal*, and *phrenic* nerves, continued in action some time after all the external muscles of respiration had ceased to move. These three organs were, in fact, the *ultima moveus* of respiration; just as respiration is itself the last spinal function which remains active in poison by Chloroform. But for this persistence of respiration, accidents from the use of anæsthetics would doubtless be more frequent than they are at present.

[1] My friend, Mr. Barlow, of the Westminster Hospital, informs me that he has repeated the experiment on the unimpregnated guinea-pig, and found the destruction of the spinal function to be as I have described it, but he failed to observe the peristaltic action of the uterus. I can only account for this by supposing that it had contracted to its full extent before Mr. Barlow directed his attention to it. In my experiments, the uterine peristaltic action was witnessed by Dr. Marshall Hall, and Mr. Henry Smith, of Torrington Square.

bservation 6. After the total loss of the spinal function, whether as
d by the irritation of the excitor nerves, or by the laceration of the
al centre, the power of the motor nerves still remained. A nerve
lying the abdominal muscles being isolated, and pinched with the
ps, these muscles readily contracted.

bservation 7. A fresh guinea-pig was nearly killed with Chloroform,
a stilet was at once passed through the whole of her spinal mar-
from the cauda to the cranium, but no spinal movement of any
took place. In other respects, the same phenomena, as those
ch have been above detailed, took place. The spinal marrow
broken down entirely; still the peristaltic action of the heart,
stines, and uterus had not ceased. The contraction of the heart,
stines, and of the uterus, had each their own peculiarities of action.
heart and the intestines both contracted and dilated, as having to
ive, and to transmit onwards, their contents. The uterus only
tens itself, as in an effort to expel its contents through the vagina.
uterus and intestines continued to act, moreover, after the beat of
heart had ceased. Thus there is apparently a certain definite order
dying, in the different organs under the control of the ganglionic
em. In the human subject, the uterus evidently contracts so as to
ver its contents, after both heart and intestines have ceased to act;
the *ultima morens* of the ganglionic system, just as the respiratory
ans are of the spinal system.

Observation 8. But, lest it should be said that the spinal function was
nihilated in these experiments, not by Chloroform, but by death, or
grave injury to the animal, it was determined to repeat them upon
frog, in which the reflex function remains active for at least a
rter of an hour after death: thus giving abundant scope for the
ervation of the effects of Chloroform upon the spinal portion of the
vous system. A healthy male frog was selected for experiment.

Observation 9. The frog was placed under a glass inclosing a little
ulous paper, wet with Chloroform. In a very brief space it became
et, and lost all power of voluntary motion. When the animal
ame thoroughly under the influence of Chloroform, the most excitor
rts of the surface of the body were successively irritated in order to
t for reflex action. The conjunctiva, the eyelids, and the alæ were
cked with a needle, without inducing closure of the eyelid or retrac-
n of the lower limbs. The toes and the tubercles on the thumb,
ich, together with the testes, were considerably developed, notwith-
nding the early season (October), were pinched without any motor
sult. Before the application of Chloroform, the tubercles in this frog,
d the inner surface of the fore-arm, were found to be intensely
citor. These trials proved that, in the living frog, under Chloro-
m, the spinal reflex function remains in complete abeyance. Even
e respiratory movements ceased entirely. On being removed from
e Chloroform vapour, the animal recovered, notwithstanding the cessa-
n of the respiratory movements for a considerable time—its recovery
ing probably owing to the influence of the skin as a respiratory organ.

Observation 10. A vigorous frog was placed as before, but turned
on its back so as to show the influence of Chloroform upon the heart's
tion: the impulse of the heart being visible upon the surface of

the body. The influence of the Chloroform was continued until the heart ceased to beat, and the animal was dead. The head was now removed, and a fine needle passed through the medulla oblongata. No movements whatever of the eyelids occurred. In ordinary circumstances in such an experiment, the eyes are drawn in powerfully, at the moment of destroying the upper portion of the spinal marrow.

Observation 11. The needle was now passed down the spinal canal; no movements whatever of the fore-arms took place, nor did any movements occur until the needle had reached the origins of the nerves at the bottom of the canal, when slight movements of the extremities were observed. The laceration of the spinal marrow itself produced no effect. This organ was evidently dead to all excitation, whether applied directly to the spinal marrow itself, or in the form of irritation to excitor nerves.

Observation 12. The nerves, also, were found to have lost their excitability, except at the time when they were irritated, as described, within the spinal canal. A large motor nerve being dissected out, was pinched without causing the slightest movement in the limb to which it was distributed. The galvanic stimulus was then applied to the nerve, with a like negative result. In this respect, the frog differed from the mammiferous animal. In the one, the *vis nervosa* remained active; in the other, it was entirely destroyed.

Observation 13. Another difference was also apparent. In the guinea-pig, the irritability of the muscles remained vigorously active for some time after death. In the frog, the influence of the Chloroform appeared much more intense. The muscles, being stimulated with galvanism, contracted very feebly. Even the muscular irritability, the last motor power which remains under ordinary circumstances, was impaired.

Observation 14. A remarkable phenomenon appeared as the last of the series. The *post-mortem* rigidity, which in the frog is very remarkable, and generally develops itself three or four hours after death, set in within ten minutes from the time when the beat of the heart ceased. The entire animal was extended and perfectly rigid. This fact renders the application of Chloroform, in the case of the frog, a very important agent for studying the nature of this peculiar form of contraction. The entire death of the frog under Chloroform is more rapid than death from the most virulent poisons; the animal dies more quickly than from either hydrocyanic acid or strychnine!

Observation 18. It remains to apply the preceding observations to the use of Chloroform in Obstetrics, and to its influence upon the physiology of parturition. The advocates of Chloroform in midwifery, admit that it exerts some influence upon the motor actions of labour. There are few who maintain, that under its use, anæsthesia is the simple and uncomplicated result,—that it annuls pain without in any degree affecting the motor powers concerned in labour. The advocates of anæsthesia maintain, however, that the perturbation of the natural actions of labour do not produce any ill results.

Observation 19. The opponents of anæsthesia in labour, contend not only that Chloroform affects the motor actions of labour, but that it affects them injuriously, weakening the parturient motor powers to such

ent as to lead to retention of the placenta, uterine hæmorrhage
nd during labour, and inertia of the uterus, to such an extent as
quire the forceps or craniotomy, in cases when delivery would
ise have occurred naturally. Both parties, the Chloroformists
ie anti-Chloroformists, appeal to experience. But, in the present
of the matter, the experience on the subject is scarcely voluminous
h, or sufficiently well-authenticated, to justify an authoritative
ision. Under these circumstances, physiology and physiological
iment can be appealed to, for at least some aid in the solution of
uæstio vexata, as well as to account for some of the contradictions
appear in the evidence furnished by experiments. In all such
physiology must necessarily be an important court of appeal.

servation 20. The increased uterine action observed under the
nistration of Chloroform in natural parturition, would appear to
alogous to the increase of the spinal function on the first inhalation
is agent. A thousand facts in obstetrics testify most irrefragably
e influence of the spinal marrow, and of the reflex function, in par-
on. That, under the influence of Chloroform, stimulation of the
l marrow is observed in the first instance, appears to be proved
imentally. In human labour, the motor influence of Chloroform
be also increased by mental emotion, at the instants of passing into,
scaping from, anæsthesia. In some cases, when the anæsthetic
ed in great moderation, its effects, however long continued, may,
aps, be simply stimulant.

servation 21. Where the motor pains of labour are rendered less
ous by Chloroform, we may infer that it is because the function
e spinal marrow, particularly of its lower portions, is enfeebled by
roform, as in the experiments in which the reflex actions were so
reduced in power. The uterus and the parturient function are
hiefly to the peristaltic action of the organ.

servation 22. But we know, that under these circumstances, deli-
nevertheless takes place. The pains may appear weaker, but
hild is expelled in many cases without any unusual delay, and, in
s, after labours of very tardy progress. In many cases where the
r is completed within the common period, labour is said not to be
fered with by Chloroform, though in reality it may be, to a very
derable extent.

servation 23. It has been mentioned, that in deep chloroformization,
sphincteric orifices of the pelvic viscera are relaxed. In the use of
roform in labour, it is universally maintained, that unusual relaxa-
of the vagina and perinæum is produced. This is naturally ex-
ed by the diminished energy of the spinal function. The vagina,
muscles of the perinæum, and of the floor of the pelvis, lose some
hat reflex power which affects all muscles, and by virtue of which
resist the passage of the fœtus, until full dilatation has been per-
ed by the gradual advance of ordinary labour. Thus, though in the
of Chloroform in labour, a power of expulsion is taken away, a power
esistance is at the same time withdrawn. In the balance of the
labour proceeds, and, in some cases, even more rapidly than usual;
thers, again, the process is very tardy or impossible. As already
rved, Chloroform does not commonly dilate the sphincters when

given in labour, or in operations, to such an extent as to cause the escape of the contents of the bowels and bladder; but it does so when given in excess. In the relaxation of the parturient passages in labour, the dilatation, though partial, is still sufficient to render labour performable, by a less exercise of motor force than usual. The existence of dilatation is at once an indication of the presence, and a measure of the extent, of the failure of the spinal motor powers in parturition.

Observation 24. It has been seen experimentally, that the peristaltic action of the uterus continues vigorous after the total annihilation of the direct and reflex action of the spinal system. It is this power which effects delivery, in some cases, in the human subject in paraplegia, and even after death, when at least the actions of respiration, and of the heart, have entirely ceased. In cases of labour proceeding under the influence of Chloroform, when the anæsthetic is pushed to the extent of enfeebling the spinal function, it is, as I believe, the peristaltic action of the uterus which, in the great majority of cases, is then the principal agent in delivery.

Observation 25. Thus, in anæsthetic midwifery, the natural arrangement of the motor powers appear to be modified in the following manner. The reflex function, as concerned in parturition, is affected in two modes. 1. The reflex actions are weakened, so that the impression of the advancing fœtus upon the excitor nerves of the parturient canal does not excite their wonted reflex actions to the same extent as usual. The spinal *contractions* are below the average. 2. On the other hand, all the parts concerned in the dilatation of the parturient passage and outlet, are in a state of relaxation, depending upon the condition of the spinal function. The spinal *dilatations* are increased by the influence of Chloroform. While this state of things obtains, the peristaltic action depending upon the ganglionic system remains in the ordinary state of activity, and in the relaxed state of the passages, is sufficient in many cases to effect the delivery of the fœtus, without any unusual delay. This dilatation of the parturient canal also exists in certain cases of paraplegia, and even after death; so that the occurrence of delivery during profound anæsthesia—the occurrence of delivery, in some cases, in experiments in which the lower portion of the spinal marrow is injured or destroyed—the occurrence of delivery in the dead subject,—are no proofs whatever that the spinal marrow is not actively concerned in natural parturition, or that peristaltic action is the sole power by which the fœtus is expelled in natural labour in the human female, where the dilatation of the parturient canal is commonly a painful process. Delivery under Chloroform, appears, then, to be a pathological condition, in which, as regards the motor actions, a state of artificial dilatation compensates, in some degree, for the deficiency of expulsive power. From these data, as it appears to me, we must survey the motor derangements which are declared sometimes to occur in the practice of Chloroform.

Observation 26. The facts relating to the destruction of the spinal functions, including the respiratory function, tend to show, that in the treatment of persons dangerously affected by Chloroform, the attempt to excite artificial respiration alone is not likely to be attended with success; but that the peristaltic action of the heart should be kept up

anism, and other direct stimuli, until, if possible, the poison shall
een eliminated from the spinal system. It appears evident, that
le reflex movements of respiration have ceased, the heart may
t; and to this organ attention should, I think, be chiefly directed
attempts at resuscitation in accidental poisoning by Chloroform.
rvation 27. The experiments detailed, furnish some important
ic hints of a practical nature. It has been recommended by the
ies of anæsthesia, that the ergot of rye should be given with
form, in certain cases, in order to strengthen the actions of the
in tardy labours. A little consideration will show, however,
e ergot is not likely to be serviceable in uterine inertia, compli-
with Chloroformization. There can be no doubt, that the ergot
acts as a spinal excitant, sometimes even producing general
movements in the limbs of the parturient woman. It is little
than a contradiction, to give a spinal *stimulant* and a spinal
ce, at one and the same time. The true indication in this form
rtia would be, to stimulate the peristaltic action of the uterus by
ism, or by direct mechanical irritation. The appeal should be
not to the spinal function—at least not while the influence of the
hetic continues—but to the peristaltic action of the uterus, which
ns unimpaired by the Chloroform, after the spinal function has
enfeebled.
rvation 28. In uterine hæmorrhage after delivery, occurring
the use of Chloroform, the knowledge of the peculiar way in
this agent affects the nervous system, supplies important indica-
of treatment. Reliance should not be placed upon the administra-
of ergot, or the excitation of uterine reflex action by cold and other
s; but on mechanical pressure, the galvanic stimulus applied to the
s, and direct mechanical stimulation of the organ. In the arrest of
ne hæmorrhage under Chloroform, there can be little doubt, that we
the serious disadvantage of the loss of one of the most efficient motor
rs for its arrest. Similar considerations also apply to those labours
bstetric operations, in which a diminution of the motor force of the
s is of temporary advantage, and in which a safe and manageable
tive of the utero-spinal action would be an invaluable boon; but to
r fully upon these matters on the present occasion, would occupy
space and time than I can either claim or afford.
bservation 29. The principal conclusion deducible from the experi-
ts detailed in the present paper, and warranted by the experience
hloroform in midwifery, upon which I would insist, is this,—that
roform enfeebles the action of the spinal marrow and the reflex
tion, *pro tanto*, according to the profoundness of the anæsthesia
ced, but that it leaves the peristaltic actions little, if at all, affected,
ng as life continues. Besides the influence of volition and emotion,
action of the uterus in PARTURITION is both REFLEX and PERISTALTIC;
peristaltic action being, as I have insisted, in my work on *Parturi-*
and Obstetrics, "the basis of the other uterine actions",—"the
s or radical element upon which the other causes of motor action
ate"; and I quote these words to show that I have not underrated
importance of uterine peristaltic action. Setting aside natural
ur, abnormal parturition may be divided into two great classes,—

1. Parturition with diminished motor action. 2. Parturition with excessive motor action. The study of the relation of Chloroform to these two classes of difficult labour, and to the different forms of motor power concerned in natural and difficult parturition, is scarcely less important than its study as an anæsthetic. I have attempted to supply the indications according to which this study should be pursued.

NOTE. In the discussion on the employment of Chloroform in midwifery, in the course of which the experiments detailed in the preceding paper were briefly alluded to,[1] Mr. Barlow is reported to have observed as follows: "He had heard it said that the production of anæsthesia in cases of midwifery, had shown that the uterus was independent of the spinal cord. They showed nothing of the kind. How could it be said that the influence of the cord was withdrawn from the uterus, as long as breathing continued? Was it possible to destroy the function of the cord below, and yet leave the medulla active, there being only one circulation for the whole cord?" Fully coinciding with the first remark of Mr. Barlow, I would refer to Observation 5, as giving the answer to his two most important interrogations. The function of the medulla oblongata *does* appear to continue, after the rest of the spinal marrow has died. I find that a confirmation of this observation may be drawn from a detail[2] of some excellent experiments performed by Dr. Sibson, but without any reference to uterine action. Dr. Sibson says, "As the action of Chloroform increases, costal respiration ceases, and the diaphragm only acts: the functions of the spinal marrow being gradually destroyed *from below upwards*." This is in strict accordance with what I have observed, and the mode of dying peculiar to the spinal marrow, is very important with reference to the influence of Chloroform upon the functions of this organ, and especially with reference to the uterine reflex actions.

Bolton Street, Piccadilly, November 1849.

[1] Vide Report of Proceedings of Westminster Medical Society, Oct. 27, and Nov. 3.

[2] Medical Gazette, February 18th, 1848.

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concluding a hasty notice of various works on Cholera in our April ber, p. 346, we promised to review the other memoirs which were then atening to issue so abundantly from the press; and we now proceed, in measure, to redeem that pledge. The more important detached me- s and observations, which have appeared in our own or in foreign journals, already been either transferred to, or noticed at sufficient length in, the don Journal of Medicine, and we have therefore only transcribed e the titles of such essays as have reached us in an independent form. r giving a brief description of the different works before us, we will eavour to embody, in a few simple propositions, the sum of our knowledge holera. The principal deficiencies, and the most likely means of sup- ng them, will then suggest themselves to our readers.

r. Alcock opens with a long address to the public, for whose enlighten- t his book has been chiefly composed. There is also an address to the blin Board of Health. The author is a non-contagionist. "I have ac- red", says he, "a thorough disbelief in the contagiousness of Cholera; for

I am certain, that when Cholera reaches any locality, it is equally diffused through that locality; but, like the hovering eagle, makes its stoop upon its easiest and surest prey: hence its fatality amongst the poor and profligate. Our worst cases came from Leeson *Lane*,—yet I never heard of any case occurring in Leeson *Street*", p. 54. The choleroid diarrhœa, Dr. Alcock treats with pills of acetate of lead and opium: this we regard as sound in principle, but the same medicines (in our experience), administered in small enemata, are more rapid and certain in their effects. Minutes are often precious. A little more serous hæmorrhage from the bowels may make all the difference possible, in the issue of the case. Blood-letting the author appreciates at its proper value,—that of a mechanical remedy which may relieve congestion, but is otherwise fraught with danger. The pathology and treatment of Dr. Alcock, we may say (in a general way), are sound. His anti-contagion arguments have not convinced us.

The work is hardly entitled to be called a Treatise on Cholera, as it is rather a series of fragmentary essays, commencing with "an address to the public", and ending with a history of "the Tooting massacre, or murder of the innocents!"

Dr. James Bird's pamphlet is one of the best of the publications called forth by the recent epidemic; and the only error of the author, of which we have to complain, is his brevity. We should like to see a complete history of Cholera by Dr. James Bird. Such a work is required, and there is no one better able to execute the task. As almost the whole of this pamphlet appeared in our pages, we pass on to the next on our list.

Dr. G. G. Bird's brochure being intentionally adapted to the general reader, is hardly within the sphere of our criticism. So many very questionable medical works are concocted for the unprofessional part of the community, that we think it right to say, that Dr. G. G. Bird has not transgressed the bounds of propriety, but has really produced a pamphlet likely to be useful to those who are unable to master more learned treatises.

The author, we observe, complacently adopts as "historical illustrations" matters of controversy. He speaks, for example, of the "Irish typhus" as "a new epidemic which appeared first in 1846"; and he states that small-pox and measles first showed themselves in the sixth century, and scarlet fever early in the seventeenth century; that syphilis became first known about the year 1494; and that the present malignant Cholera first appeared in 1817" (p. 17). We beg leave to say, that these assertions are not in accordance with the researches of many learned men; and that, in place of being historical illustrations, none of them are more than hypotheses.

Dr. William Budd issued his little work in hot haste, almost simultaneously with the famous announcements of Drs. Swayne and Brittan, which we have already very fully laid before our readers. His speculations are entirely based upon the unconfirmed discovery of special Cholera bodies by these gentlemen, with whom Dr. Budd was associated in the investigation, instituted by the Bristol Medico-Chirurgical Society, into the pathology of Cholera.

We find it stated (p. 9), that, "in the rapidly fatal cases in which no fluids are *ejected* from the body, there is always a large *outpouring* of fluid into the intestine, although this fluid may not be voided. Death, here, in fact, is the exact counterpart of death by internal hæmorrhage". If this phenomenon be "always" present in the rapidly fatal cases, it is not noticed by those authors who have most minutely described the pathological anatomy of Cholera. From *à priori* reasoning, we think it very probable that Dr. Budd may be correct in his statement; but, in the mean time, it stands in need of confirmation by the detail of many dissections.

Mr. John Grove relies greatly on Sulphur in the treatment of Cholera: in fact, he almost announces it as *the specific*. "Should it be proved", says he, "as I anticipate, that sulphur is an antidote to the Cholera poison, it is

ilikely that the same remedy may be available for other epidemic
s" (p. 25). We have no doubt whatever, from the facts furnished in
rove's pamphlet, and from others which have come to our knowledge
entirely different, and most impartial, sources, that, in the earlier
of Cholera, this medicine may be productive of great benefit; but we
from being convinced that it is more than one of several therapeutic
, of which the same may be said. Mr. Grove gives, in a tabular form,
ses of "Cholera and Choleraic Diarrhœa" treated by Sulphur; and the
were three in number. It is stated, that "none of the cases recorded
se tables were of a simple nature; in each there was some peculiarity
gave rise to alarm and anxiety". We have no doubt that benefit arose
Mr. Grove's treatment; but nothing more than a general impression of its
ss is conveyed to our minds by his statistics, as we have found, by
l enquiry among our friends, that the ratio of recoveries, in any given
er of cases, depends more on *the diagnosis*, that is to say, upon the
iple in which certain cases are embraced in, or excluded from the lists,
upon any other cause. Every method of treatment has been statistically
d (?) by somebody or another, to be the best; and not a few methods have,
e same way, been made out as hardly ever known to fail. It is, there-
not from the *numerical argument* of Mr. Grove, that we think well of
ur in Cholera, so much as from the *general impression* which the
hlet conveys, that Mr. Grove is a sound and competent observer of
se, and not likely to be greatly misled in a matter of this kind.
llateral circumstances strengthen us in our opinion. We have now
e us a letter, dated 22nd September, 1849, about business matters,
en by a gentleman in Edinburgh to a physician in London, to which
ollowing postscript is appended:—"I saw a man to-day from the south
s,[1] who told me, that his wife and he, as well as many of the people of
emote landward parish, had been very unwell; and, from the symptoms
h he mentioned, it was clear that they had suffered from Cholera, or had
saved from it. They had no medical man near them, and got no
cal attendance, yet there were no deaths. As soon as they found cramps
over them, they took a teaspoonful of powdered brimstone, or, some-
s, the flowers of sulphur, mixed with a little whiskey, to which was added
r, if the sick could not otherwise swallow the dose. The man described
ure as certain, and very rapid. Try this on the London folks; it may
e the afflicted, and do you much good". This accidental non-professional
mony seems worthy of notice.

itchell says that, "the sulphureous localities of the sickly island of St.
ia are its only salubrious places. Cities, too, which abound in sulphur
lucts . . . . enjoy an immunity from ague, for which they are everywhere
d.[2] Immediately around the sulphur works, and factories for making
powder and sulphuric acid, the vegetation and the ague disappear
ther". To this we may add, that, this year, during the bombardment of
e, that city suffered much less than usual from malarious fevers,—a fact
ch induced Mr. Walker to recommend cannonading, and the discharge of
works, as measures likely to ward off, or prevent the spread of, Cholera.
our number for April (p. 346), in reviewing Mr. Blacklock's pamphlet
dras 1848), we did not entertain with favour his theory of the disease,
his sulphur treatment; but the perusal of Mr. Grove's pamphlet, and
facts at which we have glanced, lead us to believe, that though Mr. Black-
's theory be untenable, there may be some value in his therapeutical
hygienical dogmata. The following are his ideas:—"I hope yet to see the
when sulphur, in small quantities, will be regularly issued to every
lier in the field, in India, say forty grains per day, while actually march-
, and twenty grains per day, during halts, as a sure way of warding off

[1] Sheep pasturage in the south of Scotland, very thinly peopled, and ill drained, we believe.
[2] And what is Cholera but a pernicious ague?

this terrible disease; and I have a firm belief that sulphur, so employed, will be as effectual in banishing Cholera from our armies, as lime-juice has been in eradicating scurvy from our fleets".

Mr. Grove quotes the following curious passage from the *London Practice of Physic*—a work published in 1692:—"In the year 1670, about the autumnal equinox, a world of people here were seized with a most dangerous flux (though without blood), and joined with a cruel vomiting, which presently caused great faintings and a total decay of strength. For the cure of this disease, no evacuation did good; nay, bleeding, vomiting, and purging, did hurt, only cordials, and those of the hottest nature, to wit, such as abounded with *spirit and sulphur*" (p. 22). From this, it would appear that the whiskey and sulphur treatment of the south muirs of Scotland is an old tradition.

Manec administered sulphur in all possible forms, in his treatment of Cholera in the Salpêtrière, as we stated at page 673.

Sulphur is a stimulant of the capillary circulation, and so is camphor—one of our best remedies against collapse. Perhaps the combination of the sulphur with hydrogen is the cause of the augmented heat in the surface of those who take the former in repeated doses. The characteristically offensive smell of sulphuretted hydrogen gas is proof sufficient that this chemical action does take place.

Dr. Knox has digested and arranged a great mass of information, and has thus produced a most interesting and instructive volume. As it appeared in January last, the great and important additions which have, since that period, been made to the literature of Cholera, are not embodied in the work; but almost everything of value which appeared before that date, has been noticed. The first chapter is a history of Cholera, from which it appears that it is *not a new* disease. The second chapter contains an account of the morbid anatomy, which is a fair summary; but no summary of observations made by different individuals, in different circumstances, can convey very precise ideas on this subject. Chapter third gives the pathology, with reference to the proximate cause of the disease. The author thus enumerates his conclusions:—

"1. By the operation of various causes, either singly or in combination, a morbid impression is primarily made on the mucous membrane of the stomach and intestines.

"2. The first effects of this impression are manifest in a general feeling of indisposition, change in the expression of the features, languor, precordial uneasiness, nausea, diarrhœa, and other marks of derangement of the digestive apparatus, generally described as preliminary signs of Cholera.

"3. The symptoms there described may be, however, more correctly classified together as the first stage of the disease, tending, if unchecked, to be succeeded either simultaneously, or in succession, by biliary, and then by sero-albuminous discharges from the alimentary canal.

"4. As effects of the evacuations in question, conjoined, possibly, with a direct morbid impression made on the nervous, and perhaps the circulating, system, may be enumerated, alteration in the quantity, consistence, chemical composition, and colour, of the blood; arrest of the secretions; spasms, varying in kind, situation, and intensity; diminution of the animal heat; lividity of the surface; internal congestion of blood; failure of the various functions; collapse; and, where the disease continues unabated, death.

"5. Not as a direct result of, nor essentially forming a stage in the disease, but depending on the weakened condition of the system, and the general derangement of its various functions, reaction, in different forms and degrees of intensity, may take place, assuming variously the type of bilious or typhus fever, or passing into a congestion and inflammation of the lungs, brain, and digestive apparatus, either separately or conjointly.

"6. Cholera does not, like typhus or eruptive fevers, run through a deter-

te course, but may be arrested, at any stage of its progress, by the
s of nature, or by the judicious application of remedies."
. It may occur either sporadically, or amongst large numbers at once,
requency of its occurrence, and its intensity, being determined by the
ined effects of some epidemic influence not yet understood, and of vary-
egrees of individual susceptibility." (pp. 53-54.)
n limited space forbids criticism, otherwise we would pause to examine
bove conclusions.
e *Symptoms* of Cholera are described in detail in the next chapter.
following passage regarding the influence of the disease upon *Puerperal*
en and the Fœtus in Utero is interesting; though we rather think some of
tatements are not applicable to all localities. "In the Cholera Hospital
ork, a great number of females, affected with the disease, continued to
suck; and in a patient at the St. Pancras Hospital, the secretion of
did not cease, although the urine was suppressed, and miscarriage took
The disease usually, if not always, proved fatal to the fœtus, although
alludes to more than one infant carried to the full time. In several
ses, delivered by him immediately after the death of the mothers from
era, there was not the slightest evidence of life; and he always found
body, as well as the placenta and umbilical cord, to be exceedingly
and bloodless, although the temperature of the interior of the vagina
uterus was in every case extremely high. He also observed, that the
entary murmur became more feeble, and usually less and less obvious as
pulse sank; but it was rendered at once more powerful and distinct by
l-letting. The fœtal circulation generally became more rapid and
ar with the progress of the disease." (pp. 59-60.) It is a pity that we
not informed of the number of cases, and of the names of the observers
whose authority these generalities are given. Here, as in much that
been lately written about Cholera, we have to complain of a disregard of
ision, where absolute statistical accuracy should have been attempted.
elapses are thus spoken of:—"From the united testimony of Brown,
drin, and many others, it appears that relapses were much more frequent
urope than in India, or at Orenburgh. Indeed, in Bengal, as we are
by Jamieson, a second attack was a rare occurrence, whilst, in the
tice of Mackintosh, they were very frequent; and the later testimony of
n, from Scinde, is to the same effect: some of the men having had three
cks before leaving the hospital, of which the last was the severest.
his question, as to the circumstances in which relapses occur and do not
r, requires elucidation. We are not aware of any author who has attempted
analysis of the facts. So far as the imperfect data which we possess
le us to come to any opinion, we are inclined to think that the same
tment, hygiene, and change of air, which prevent the repetition of a
oxysm of intermittent fever, will, in essence and principle, be found to be
e which avert, or soften the recurrence of the Choleraic paroxysm,—
ch, in cases sufficiently moderate to admit of adequate observation, presents
same stages as the former, though generally in a more pernicious form. We
k, however, that an examination of the subject of "*relapses*" is much
ted; as, besides its independent interest, it would tend to clear up and
blish some points in the etiology of the disease.
he remarks on *Diagnosis* are brief, and most unsatisfactory. In fact,
ing of value can be said on the subject, till an enlarged view be taken of
cases of diseases prevailing during an epidemic, and their various
tionships be carefully studied. An immense mass of valuable informa-
has been lost by individuals setting up a picture of Cholera, and exclud-
from the facts on which their conclusions are founded, every case which
not correspond with their fancy formula of symptoms. They have in
way virtually expressed an opinion, *and then selected facts wherewith to*
port it! It is within our own knowledge, that the Cholera statistics

edited by the Registrar-General, are to a great extent deteriorated by this absurd system; and the observations which practitioners of repute and good judgment retail in conversation, in societies, and in print, show that very few indeed have had their eyes open to the importance of studying the natural history of the milder Choleroid affections (with which almost the whole population of the southern bank of the Thames were affected, who escaped the graver form of the epidemic). The symptoms of complex cases of disease are best studied and analysed, first in mild cases, and then in groups, varying in the arrangement and severity of their phenomena. The vomiting, the purging, the cramps, the suppression of urine, and the pulmonary oppression, might all, two months ago, have been examined in a scale of cases ascending from the most trifling to the most awfully malignant and uncontrollable; but the fashion was to say,—this is not Cholera,—that is not Cholera,—this is not "Asiatic" Cholera, and so on. In this way, the symptoms have been little analysed; and the attention of the profession has been chiefly directed to that form of the disease in which they are too severe and too complicated to admit of individual scrutiny.

The *Prognosis* is unfavourable, we are told (chapter sixth), in epidemic Cholera, "Dr. Wright having calculated, that of one hundred million of cases occurring since 1817, one half have perished". It need hardly be observed, that the comparative mortality from Cholera varies with the fancy of each reporter; for what one man calls Cholera, another maintains to be something else. In this, as in most subjects of medical inquiry, the actually available statistics are miserably scanty. Those now before the profession with reference to Cholera, would lead to various and contradictory conclusions, most of them being very far indeed from the truth. In fact, the results would be of this kind:—few or no deaths if Dr. Ayre's treatment be adopted and properly carried out; every case fatal in which Dr. Ayre's system was tried; mortality very trifling in cases treated by Morrison's pills, hydropathy, or homœopathy. Notwithstanding what we have said, the elaborate tables given by Dr. Knox of "proportional attacks and mortality in various places" are possessed of much interest.

The *Etiology* of Cholera is treated of, in the seventh chapter, at considerable length. Natural susceptibility, predisposing and exciting causes, atmospheric influence, mineral effluvia, vegetable sporules, electricity, planetary influence, meteorological phenomena, malaria, and the contagion-question, are severally discussed. Through all the facts and reasoning on them, it is impossible to follow the author; but we may, nevertheless, say that the chapter is carefully compiled, though (from the date of publication) deficient in recent facts. We can agree with the author, in saying that the diffusion of the disease depends on unknown causes; but we cannot admit that all the causes of diffusion are unknown; nor can we, in the face of the history of the last epidemic, and with the facts detailed in the Indian reports, adopt Dr. Knox's conclusion, that Cholera "has not been proved to be contagious". We adopt the opinion, which is every day gaining strength, that its spread depends upon several influences,—one of which is communication with the sick.

Prophylaxis, in chapter eighth, is discussed under the heads of temperance, food, cleanliness, abundance of light and air, chemical agents, quarantine, and removal from an infected district. Removal to a healthy district,—especially to a dry and airy situation,—is truly regarded as the most effectual means of prophylaxis. "Many examples", says the author, "may be found scattered through the history of the epidemic; but a few instances will suffice to illustrate the point. The first to which we shall refer occurred in the army of the Marquis of Hastings, in India. When nearly ten thousand men had perished within a very brief period, directions were issued for a change of quarters; and the troops having moved forwards a few days' march, broke fresh ground on the banks of a healthy stream, when the disease abated,—and that suddenly, in the most remarkable degree. Kennedy, however, in

rting to the circumstance, alleges that the epidemic was subsiding
e the army moved from their first encampment, but rather inconsistently
ts, that, in the line of march to their new position, the road was covered
the dying and the dead. Again, when the epidemic was raging at
ltar, a regiment which marched out to cantonments on the Spanish
, escaped; and, during the virulence of the pestilence at Aleppo, Lesseps
French consul there), in company with two hundred persons, retired to
den situated at a short distance from the city, closed within walls, and
unded by a large fosse; and, as long as the malady lasted, nothing was
tted into the place, without all the precautions observed in lazarettos.
is case, not one of his followers was attacked by the disease, which, mean-
, destroyed in the city upwards of four hundred souls. Similar mea-
were followed by like results in Persia, as detailed in a letter from M.
ba to Baron Larrey. It is true that the immunity alluded to has been
buted to the simultaneous adoption of complete restriction of intercourse
the infected; but the same results were apparent where no precautions
ever were taken, beyond change of residence; and that this was the
cause of safety, may be inferred from the fact, that, throughout the pro-
of the epidemic, its progress has been principally confined to particular
lties, beyond the limits of which the inhabitants suffered little or
ing from its ravages. This peculiar feature in the disease was well
plified in the escape of one side of a street, one division of a barrack-
re, of particular regiments in the field, or even in different lines of the
regiment in India; and many similar instances occurred in Europe."
179-80.)

As the only rational prophylactic measures, these may be briefly recapitu-
,—strict temperance in all things, personal and domestic cleanliness,
attention to the first symptoms of indisposition, during the prevalence
ie epidemic, removal, where duty will admit of it, from an infected to
ulthy district, and above all, a cheerful and patient resignation to the
of that Divine Being, who doeth all things well, and will not unneces-
y afflict His erring creatures." (p. 183.) In addition, we would suggest
all should be kept in the most vigorous condition possible, by the regula-
of diet, exercise, and sleep, assisted in a large proportion of the population
ich special medicines as iron and quinine, separately, or in combination.
ie various remedies and classes of remedies which have been recommended
ied, (embracing the recorded practice of some hundred practitioners,)
lescribed and compared in the ninth chapter. This is a very useful and
esting part of the volume; and we regret that we cannot afford space
nore than one short extract.

On the whole, we question whether the recorded *Results of the Exhibition*
fercury will enable it to retain its position in the opinion of the profes-
generally, as being superior to all other remedies, and fully concur in
iew expressed by Dr. Sharkey, that it had no specific action whatever
allying a patient from collapse. The horrible ptyalism sometimes pro-
d by it has been also urged as an argument against its employment; but
is drug were really possessed of the curative virtues attributed to it by
Ayre and others, this objection should have little weight, when reference
ad to the very deadly nature of the disease to be combatted. It is,
ever, difficult to determine precisely, on what the alleged power of
uel over the malady depended; for it was administered in quantities
e too large, and too frequently repeated, if employed merely as a pur-
ve; and ptyalism is conceded not to have been necessary to a cure, the
veries being as frequent without as with this specific effect. Indeed,
Ayre, one of its staunchest advocates, admits that, during collapse, no
rption of the drug takes place. And this is evident from the cases on
rd, masses of calomel being found lying unchanged in the alimentary
l after death; and when we read of its being administered in large

quantities varying from five to fourteen hundred grains in the course of a few days, without inconvenience, we are naturally led to conclude, that, fortunately for the patient, it has been almost if not entirely, inert. *What result might be anticipated from the absorption of a quarter of a pound of calomel, administered within a few days to a single patient?* With reference to the opinion here expressed, we may state that Cumming, when in India, was frequently able to collect this drug from the stomach after death, precisely in the state in which it had been swallowed, not having even come in contact with the inner coat of the stomach, from which it was intercepted by a viscid secretion which lined the mucous membrane. In dismissing the subject, it may be stated, that to sanction the treatment of Cholera, by the administration of enormous quantities of a drug so powerful as calomel, more will be required than general assertions of its utility, however strong; nor should it be adopted, except on the most satisfactory statistical demonstration of its superiority over safer and more rational methods of cure. I would not, however, be understood to proscribe the legitimate use of mercury in this disease, but merely to protest, as strongly as the importance of the subject demands, against what seems to me to be a dangerous abuse of a very valuable medicine." (pp. 205-6.) The fact for which Dr. W. P. Cumming is cited as the authority, is detailed in an interesting, racy, and most original book of travels published in 1839, by that gentleman, under the title of "Notes of a Wanderer in Search of Health."

The leading objects of treatment are thus summed up by Dr. Knox.

"1. To tranquillize the irritation of the stomach and intestines, and appease the distressing thirst.

2. To arrest the discharges.

3. To allay spasm, and tranquillize pain, and other nervous symptoms.

4. To restore the secretions of the liver and kidneys.

5. To keep up, or recruit the circulation and natural heat of the system, and support the strength.

6. To moderate the fever, and counteract the tendency to visceral inflammation in the re-active stage.

7. To adopt such measures as may hasten convalescence, and prevent the danger of collapse.

These indications, it will be seen, simply resolve themselves into the adoption of measures for the prevention or counteraction of collapse, and the management of fever, when that may happen to supervene." (p. 232.)

A Chronological Bibliography of Cholera occupies the twelfth and last chapter. This, with the notes appended to each chapter, the author correctly believes to be "the most complete bibliography of Cholera in the English language." By adding to it, references to the books and papers which have appeared since his book was published, nearly a year ago, Dr. Knox would make this important department quite perfect.

The Appendix contains formularies of astringent, sedative, antispasmodic, stimulant, aperient, diaphoretic, tonic, and diuretic medicines; and also a short account of the Cholera in 1848.

The work of Dr. Knox we leave with reluctance. From the clear and sound judgment which it displays, and the extraordinary amount of well-digested information which it contains, it must take a permanent place among the classics of our medical literature.

Sir James Murray's publication is wildly hypothetical, and sadly destitute of applicable facts. The following sentence, however, does contain a seasonable truth. "The pathological consequences of electrical alterations are not yet sufficiently ascertained to admit of mathematical demonstration." (p. 50.) The following is the expression of a hope: "I have much reason to believe, although not yet able to prove the fact, that positive electricity bears a relation to *active ailments*, and negative electricity to passive complaints." (p. 61.)

R. PARKES' pamphlet is a very valuable contribution to the facts by
ch the question of contagion has to be tried. The reasoning is excellent.
far as we can at present judge, from what is known regarding the spread
'holera in Great Britain, there appears to be much evidence in favour of
position that this extension has occurred in two ways, most commonly by
pendent manifestation in particular localities, but sometimes by trans-
ion through the medium of diseased persons." (p. 26.)

R. SHAPTER has made a splendid contribution to the history of Cholera,
to the medical topography of England.

R. HENRY STEPHENS trusts to Calomel: but why, we cannot discover.
following passage refers to some medicines which are, in certain circum-
ces, useful. "To those medical men who have not the same faith and
idence in the power of calomel as I have, I would suggest a trial of the
wing agents, each of which, by its effect of coagulating albumen, I should
ect to be beneficial in the early but threatening stage, when there are
e-water' evacuations; alum dissolved in water; creasote in pyroligneous
; nitrate of silver, in the proportion of one grain to the ounce; perchlo-
of mercury, in doses of half a grain, dissolved in four to six ounces of
er. These may be combined with laudanum, in 20 to 40, or 60 drops for a
. The effect of the nitrate of silver in coagulating albumen, and changing
appearances of diseased surfaces in external sores to a healthy appearance,
ld lead me to expect much from it. But it must be borne in mind, that
imple diarrhœa, opiates, with essential oils and creasote, will cure the
ority of cases; but when the diarrhœa resists these means, I would try
er the perchloride of mercury, or nitrate of silver; and should the symp-
s still continue and cause alarm, I should affect the mouth as speedily as
ible with mercury, and probably this could be done more readily with the
osive sublimate than with calomel." (p. 45.) We quote the concluding
graph: "I am impressed strongly with the value of the principle I have
ested, that to antiseptics we must look for the curative means of Cholera,
not only of Cholera, *but of all malignant fevers*; but I have still this con-
ion, that if we find a remedy which will arrest Cholera with certainty, it
t be before collapse is complete. When that stage is fully established,
Disease will be found to have triumphed, and Art must resign the
est." (p. 47.)

R. SNOW's interesting views have been already fully brought before our
ders in the reports of the Westminster Society, pp. 1077, *et seq.* They are
to some extent, and have given a useful bias to one part of the inquiry
the mode in which the disease is communicated.

R. WINSLOW put forth his brochure very seasonably, in the midst of the
ic. It originally appeared as a newspaper letter. The author says—"a
able reliance on the will of God, a well-sustained piety and cheerfulness
mind, combined with a careful avoidance of those physical agents known
ave a deleterious influence on the health, are the safest and most legiti-
e means of protecting us from this terrible malady. It is our duty, in-
dually as well as nationally, to fortify and strengthen the system by
lutely determining not to yield to useless fears, and childish apprehen-
s; and as far as it is in our power, to inspire ourselves and neighbours
energy and courage: and as a powerful prophylactic agent, to cultivate
Sweet unanxious quiet for the mind."

We have now given an account of thirty-two separate publications on
lera, in addition to the numerous articles which we have given entire or
dged in our Digest of the Journals and Reports of Societies. To some
lers, we fear, the devotion of so large a proportion of our space to one

subject may have been unacceptable; but as it is at all times our object not merely to give variety to our pages, but also to make each volume of the London Journal of Medicine a library book of permanent value, we have judged it necessary to surrender as much space to the subject of Cholera, as would fairly allow the whole of our actual knowledge of the disease to be laid before our readers, or the sources where it is to be found accurately pointed out. We have omitted notices of most of the alleged specifics which have been so senselessly and so clamorously obtruded upon the public, and the profession, by some of our brethren, in the weekly medical journals, and even, we regret to say, in the daily newspapers.

We have preferred giving in detail, clinical facts, and the opinions of competent observers—even at the risk of wearying by sameness and repetition—rather than offering our own views in the form of commentary or criticism. It seems proper, however, to state the CONCLUSIONS at which we have arrived, from the careful study of all that we have seen and read, not with the pretence that they are unimpeachable dogmata, but simply as a series of truth-like propositions, whereby each student may be assisted in examining the data for himself.

1. That Cholera is a fever, intimately related to those fevers which depend on malaria.
2. That the intermittent or remittent type can be generally recognized in the milder, and also not unfrequently, (though less distinctly,) in the severer cases.
3. That the stage of collapse ought to be considered as an aggravated cold stage of the paroxysm of a pernicious fever, which may spontaneously terminate in death or reaction.
4. That the least dense portion of the blood has an excessive tendency to exude through the capillaries of the stomach and bowels, and pass from the body by vomit and stool.
5. That the inspissated residual blood being unable to pass through the small pulmonary vessels causes congestion of the lungs; and as speedy consequences of this condition, paralysis of the right side of the heart from over-distension, asphyxia, and other subordinate derangements of the vital actions.
6. That death may take place from
   a. Asphyxia.
   b. Necræmia *with* loss of the least dense portion of the blood by stool and vomit.
   c. Necræmia *without* such loss of the least dense portion of blood as can be discovered during life—the exudation remaining within the stomach and intestines.
   d. Toxæmia from absence or deficiency of sanguineous depuration.
   e. Inflammation of lungs or other organs supervening in convalescence.
   f. Debility.
   g. Gastro-enteritis.
   h. Two or more of the above causes combined.
7. That the anatomical lesions found on dissection vary with the causes of, and circumstances attending, death.
8. That the *treatment* cannot be reduced to any routine formulary, but ought to be adapted to the particular condition of each patient, and to the stage of the disease: that the "rice-water" vomit and purging require to be energetically subdued by acetate of lead, creasote, nitrate of silver, and such like suitable remedies: that, in threatened collapse, the hot wet blanket, stimulant embrocations, stimulants which act on the capillaries (camphor and sulphur) are of signal benefit: that in reaction, and during convalescence, local inflammations, and congestions, require to be guarded against or subdued, and rational means adopted to restore the secretions of the liver, kidney, and skin, but

particularly of the two former; and, lastly, though not of less importance, that the character of the fever be modified, and a repetition of the paroxysm be guarded against, by change of air, or by the administration of quinine, which, in the majority of cases, from the existence of anæmia, ought to be conjoined with iron.

That the *prophylaxis* of Cholera consists in removal to a better air, improving the sanitary condition of localities and individuals, and in the exhibition of the disulphate of quinine twice or thrice daily.

AND WRITINGS OF THE LATE JOSEPH CLARKE, M.D., formerly Master of he Dublin Lying-in Hospital, etc. etc.: Containing minute results of is Private Practice, extending over a series of forty-four years, including ,878 births. By ROBERT COLLISS, M.D., President of the King and Queen's College of Physicians in Ireland, formerly Master of the Dublin Lying-in Hospital. pp. 88. London: 1849.

is tiny volume is a most valuable addition to obstetric literature and cal biography. We regret, however, that Dr. COLLINS has given us so t an outline of the private life of his illustrious father-in-law, and so few mens of his correspondence. Doubtless, the life of a busy and successful in physician could furnish few passages of vicissitude or stirring incident; rom the information contained in the volume before us, we cannot help ing that Dr. Collins has erred, in withholding much which would have both interesting and instructive. We trust this small volume is but the aste of a complete memoir.

e sketch commences with the following AUTOBIOGRAPHICAL FRAGMENT, d attached to the last page of his first fee book: "I am told that I was on the eighth of April, 1758, in the parish of Desertlin, townland of nadoey, County of Londonderry. My father, James Clarke, had realized property, chiefly by agricultural pursuits. His character was such as I be ever anxious to emulate: his reading was not extensive, being princi- confined to the Bible. I was a second son, and very early in life showed at disposition towards school learning. At the age of twelve, I was put Latin grammar school, being then a good English scholar, clerk, and metician. I remained nearly five years with a curate (Kearns), who had educated at Trinity College, Dublin; and was always reckoned one of the scholars of my standing. After reading Euclid's Elements, my grand- e, by the mother's side, Dr. Maconchy, of Dublin, recommended Glasgow ege to me for the study of logic, mathematics, Latin and French, each hich I prosecuted with industry and sensible improvement, in the er of 1775 and '76. Thus prepared, I went to Edinburgh for the three ing years, where I studied medicine with a regularity and zeal exceeded one. In September, 1779, I graduated with great ease to myself, and reputation. Soon after my return to Ireland, I visited my friends in lin, where I received a pressing invitation to remain some time in Dr. onchy's house. Having spent about three months in this city, much to atisfaction and advantage, I determined to leave it, with the intention of ing as a physician in Derry. A friend being in pursuit of recommenda- letters to forward me in this object, heard of a companion being wanted ecompany Mr. N. L. Rowley's second son to the Continent, whither he was g for the improvement of his health. Having been fortunate enough to in this appointment, I set out on the 3rd of March, 1780, for Lausanne, Switzerland, where we spent the summer months very pleasantly, while R.'s health was tolerably good. In October, however, such a change had n place, as made it necessary for us to return to London, where I availed elf of the opportunity thus afforded me of attending Dr. William Hunter's ng course of lectures, which included those on the gravid uterus, and n which I derived several useful hints and practical cautions. In May, 1, Mr. Rowley died, upon which I returned to Dublin. During my ab-

sence, my respectable and worthy granduncle, Dr. Maconchy, died; his successor and my uncle, George Maconchy, Esq., kindly offered me accommodation in his house, and many friends advised me to think of settling in Dublin, in the accoucheur line, by which branch of the profession Dr. Maconchy had realized a good fortune. Among my advisers on this occasion, the most strenuous was Dr. George Cleghorn, one of the oldest and most intimate of Dr. Maconchy's friends. From him I then, and often after, received very sound and useful lessons. No man knew Dublin better, and few could so readily direct a professional man as to the manner by which its inhabitants were to be pleased. When I decided on attempting a settlement in Dublin, my property was inconsiderable. From my father, I was entitled to between four and five hundred pounds. Most of this had been spent on education. A balance of one hundred and sixty-five pounds was the residue of my patrimony. To this I may add one hundred pounds, presented by the Rowley family on my return, with many compliments and professions of friendship. Of my allowance while abroad, I had not saved more than twenty pounds. On the 11th of July, 1781, I entered as pupil, in the Lying-in Hospital, and on the 28th of March 1783, was appointed Assistant to the Master (Dr. Rock), for both of which I paid him one hundred guineas, so that my cash was now very low. In June 1783, through the mediation of my friend, Counsellor John Dunn, I received and accepted a proposal to go abroad with John Jacob, Esq., of the county Tipperary. His health was bad, and his mother wished him to see a little of the Continent. My companion being in love with a Miss Gahan, to whom he was afterwards married, contrived to shorten his intended absence. We returned, in August 1784, to Ireland, and after visiting Killarney, and spending some weeks in Munster, I resumed my station of assistant in the Lying-in Hospital, on the 14th of September following. By this excursion, I acquired much valuable information, from visiting the London and Continental Hospitals, gratified a great deal of curiosity, diminished somewhat my youth (which is adverse to professional progress), and saved of my allowance two hundred and forty pounds. Once more, then, I felt myself independent. On the 11th of April 1785, I was admitted Licentiate of Physic in the College of Physicians, for which I paid thirty pounds, five shillings, and five pence. On the 7th of April 1786, I married Isabella Cleghorn, niece to Dr. George Cleghorn, with whom I got a fortune of fifteen hundred pounds, and on the 3rd of November following, was elected to the Mastership of the Lying-in Hospital.

"Such are the most material circumstances of my history that I can at present recollect; they are thrown together in haste, yet they may, at some future period, serve to gratify the curiosity of some near relation, or assist my own recollection of past events. The registry of my practice will, in future, afford the best continuation of this sketch. JOSEPH CLARKE."

"Dublin, December 1786."

The following particulars regarding Dr. Clarke's election to the Dublin Lying-in Hospital, show his abhorrence of the system by which GOVERNORS must be CANVASSED; and are well calculated to point attention to the unwholesome ordeal through which medical appointments must be obtained: "When he was elected Master[1] of the Lying-in Hospital, there were three candidates for this very responsible appointment; the preceding Master had died in office, one year before the completion of his term, which naturally gave rise to an active canvass. Dr. Clarke's previous strenuous exertions to promote the healthy condition of this institution, justly advanced his claims, and he was elected by a large majority. The following extract of a letter from his relative, Professor Cleghorn, dated July 1786, (Dr. Clarke had married his niece three months previously), is worthy of the writer, and well merits the consideration of all electors and candidates:—

[1] Master is the title of the physician who has medical charge of the institution, which office he cannot hold for more than a period of seven years, as regulated by charter.

y dear Clarke,—I received your letter, requesting one from me to Dr.
ley. My stomach revolts against the usual mode of extracting pro-
and engaging votes before the governors can be sufficiently apprized
merits of the candidates. It is founded on a supposition, that all men
tuated by selfish motives, regardless of the public good, and that they
consider whether their friend be fit for the place he wishes for, provided
ace be fit for him. If you gain the election, I hope it will be by means
nd honourable; I would rather hear you had lost it, than that any
had been employed. The more a good character is enquired into, it
e so much the better for him who owns it; you must, therefore, be a
by standing the election, even should you fail of success, provided you
e too anxious about the matter, and suffer your mind to be too much
ted by a disappointment which could not have happened had merit been
ded, and which, after all, may probably tend more to your advantage
success would have done. Read the Tenth Satire of Juvenal, and reflect
e vanity of human fears and wishes—

"'Evertere domos totas optantibus ipsis
Di faciles. Nocitura toga, nocitura petuntur
Militia, etc.

then rest satisfied with having done your best to deserve success,
gh you have not obtained it.

"Permittes ipsis expendere numinibus, quid
Conveniat nobis, rebusque sit utile nostris.
Carior est illis homo, quam sibi; nos animorum?
Conjugium petimus, partumque uxoris; at illis
Notum, qui pueri, qualisque futura sit uxor.'

Mr. Rowley was on a visit to Lord Bective a day or two ago: I know not
have yet returned home. I am just on the point of going to Somer-
It is probable I may write from thence, if I hear of anything interest-
Farewell, and believe me ever yours, etc.,

"GEORGE CLEGHORN." (pp. 22-4.)

he personal details contained in the concluding pages of the memoir are
teresting and so pleasant, that we transcribe them without abridgment.
remains for me briefly to notice a few circumstances connected with the
essional pursuits and private life of Dr. Clarke, from the period at which
6), in the preceding pages, his early history concludes, up to the date of
death, in 1834, extending over a series of years, lengthened out far
nd the lot of most men, and characterized by uninterrupted prosperity,
high professional elevation, and the regard and esteem of his medical
hren.

His income from practice rapidly increased, until it reached £3,000
ly, from which amount for many years it varied but little. By accumu-
on, etc., his receipts, within the first twenty years, approached £5,000
ually, and this solely by his own exertions.

In the early period of his life he was a tall, slightly-made man, and the
gue of so laborious a profession was occasionally too great for his bodily
ngth; so much so, that, at times when returning to his home at night,
r considerable exertion, he has told me, that if he walked a short distance,
was obliged to rest himself on the way from pure exhaustion. On one of
se occasions of debility, he sent for Dr. Harvey (a well-known physician
Dublin) to advise what he should do; and after detailing to him his
bility for so much work, etc., etc., Doctor Harvey asked abruptly, 'What

" The seat of Lord Langford, near which Dr. Cleghorn's estate was, and where he now
ly resided. The Rowley family, with one of the members of which Dr. Clarke had been
the Continent, were his zealous and warm supporters at the Hospital election.

do you eat for dinner?' and 'what do you take after it?' 'Indeed,' replied the doctor (whose appetite was but indifferent), 'I sometimes take a little mutton broth, with a little boiled mutton, and at other times chicken. I take very little wine, or occasionally a little drop of spirit in water.' Dr. Harvey replied, 'Phew—nonsense, man; take your roast mutton or your roast beef, with a pint of good port wine daily, and you will be as stout a man as any in the kingdom'. 'I took his advice', said the doctor; 'I speedily improved, and enjoyed excellent health afterwards.' He certainly did not take so much as Dr. Harvey's allowance of wine, but he took it much more freely than he had previously done. He was always a man of temperate habits; he took, I should say, as nearly as possible, half-a-pint of wine daily; this, from my own knowledge, I can state to have been his habit for the last twenty-five years of his life, during which I dined in his company almost daily, and for seventeen years of which I enjoyed the utmost happiness under his roof. His practice was almost entirely confined to the upper ranks of society; and, consequently, he got large fees, as may be inferred from the statement, that in fees varying from £10 up to £150, he received £37,252.

"In his fee-book, Nov. 11, 1801, where "£1 (note)" is entered, he adds, 'First of these vile productions.' The old gold guinea, of the value of £1 2s. 9d., Irish currency, was the usual fee previously, so that the innovation was far from agreeable to physicians.

"He invariably attended to his business with extreme regularity, so as to avoid hurry and confusion. His breakfast hour was nine o'clock, and dinner hour, five, which he observed with great punctuality, when not unavoidably obliged to be absent. He usually left his house in the morning at ten, or half-past ten o'clock, and from that hour, till half-past four or five o'clock, he was occupied visiting his patients. He seldom kept more than two horses for his own carriage, and used them daily, unless sickness, which rarely occurred, made it necessary to take one of the family horses. Several of his horses ran in this way for twelve or fifteen years, working regularly from five to six or seven hours daily. He frequently told me, that the true way to keep horses in health, was to give them plenty of work, and feed them well. They were always in good condition, and fully equal to their task. He never took them out of the stable after dinner, nor did he drive them any distance from town. For early and late visits, as also for country excursions, he used job or hackney carriages.

"Prosperous and exalted as was Dr. Clarke's professional career, from the commencement to its termination, it did not exceed his happiness in his domestic circle, until it pleased the Lord, on the 5th October, 1820, to take his only son, Dr. James Clarke, at the early age of thirty-two. His death was not alone the cause of deep sorrow to his father and all his relatives, but also of universal regret in this metropolis. It was occasioned by typhus fever, which he himself thought he had contracted in the discharge of his duty as physician to the Hardwicke Fever Hospital at the House of Industry. He had been on a short visit to his estate in the county of Fermanagh, where he had taken severe exercise; and on his return to town in a fatigued state, and labouring under the effects of a cold, he visited the hospital, and, when prescribing for a very bad case of fever, he received, as he said himself, a *whiff* from the patient, of the peculiar disagreeable consciousness of which he could not divest himself ever afterwards. He died on the twelfth day of the fever, throughout which I was one of those friends who anxiously watched over him. Few men were more universally beloved by their friends, and still fewer possessed, to the same extent, the esteem and regard of their professional brethren, which may be considered one of the truest tests of real worth. This was, indeed, a heavy affliction; but his Heavenly Father sanctified and blessed it, by making it the means of directing his powerful mind more earnestly towards his Saviour, there, from this divine and bound-

ource, to seek everlasting happiness, under the influence of the Holy
Subsequently, in 1829 and 1833, the Lord was pleased to take to
lf his only remaining children, two beloved daughters. It fails me to
e on this, to me, most painful topic, than to state, 'to them to live was
, and to die was gain'.

September 1834, Dr. Clarke left Dublin for Edinburgh, to be present at
eeting of the British Association, to which I have already alluded, as also
object he had in view. He arrived there on Saturday afternoon, the 6th,
eached the house of his kind friend, Mr. Learmonth, of Moray-place,
he had been invited to remain during his visit. He had been very
t sea, and after landing found his bowels in an uncomfortable state;
s, however, in excellent spirits, but appeared to his friends pulled down,
by the fatigue of the journey, or by sea-sickness. Some friends dined
Mr. Learmonth, and he partook of a variety of food, apparently with
; he jokingly told Mr. L. he should take wine freely that day, as he found
uliarly grateful to him. The conversation after dinner was animated,
e appeared to enjoy himself, and to anticipate great pleasure from the
ng of the Association. Sunday, the 7th, Dr. Clarke stayed at home,
ving that he thought the repose might be serviceable. He passed the
ing reading; at dinner, he ate as usual, and drank his wine cheerfully;
s animated, and talked a good deal, and was in excellent spirits, both
ble and in the drawing-room. Monday, the 8th, the day appointed for
neeting of the British Association, he went out early in a carriage to
re his ticket for the public dinner, which was to take place that day,
afterwards called upon several friends. When the hour for dinner
ed, not feeling himself well, he said he was afraid of the heat that there
ably would be in the room, and that he should prefer taking a little soup
ly at home, thus to be better prepared to encounter the evening meeting
e Association. Mr. Learmonth and our kind friend, Mr. Isaac Weld,
also visited Edinburgh to attend this meeting, left the dinner early, in
r to call upon Dr. Clarke, and accompany him to the evening meeting.
heir return, they found his stomach had been sick, and rejected its con-
. He left the drawing-room, and requested a sofa might be placed in
ed-room, to which he retired. His pulse at this time was feeble, but
quick. He now told Mr. Weld he felt differently under this attack
what he had ever experienced before, and should it prove fatal, he
ested his remains should be put into a leaden coffin, and taken to Money-
e, where his father was buried, as he had always a great aversion to being
red in the crowded burying-ground of a city. He told Mr. Learmonth
ad no fear of death, as his trust was fixed on his blessed Redeemer.
n he was settled in his bed-room, and had some wine-whey, which he
ed for, Mr. Learmonth and Mr. Weld left him, and as they considered
very ill, agreed to have medical advice instantly. Dr. Clarke had himself
ulted Mr. Bell in the morning. As speedily as Dr. Abercrombie and
Bell could be found, they visited him, which was about ten o'clock, p.m.
y considered him dangerously ill. September 9th, he passed a very
mfortable night, and suffered considerably from griping pain and spasm
he bowels. He asked to see his friend, Dr. Jackson of Dublin, who was
in Edinburgh, and gave him the paper which he had intended to read
he meeting of the medical section of the Association. Drs. Abercrombie,
kson, and Bell afterwards met; they then gave over all hopes, and thought
could scarcely live to next morning. He was at this time in a torpid
e, his voice thick and indistinct, and his features greatly changed.

Wednesday, September 10, he continued in the same state of torpor in
ch he had been the previous evening, but his medical attendants found
strength had sunk greatly, and that his life was drawing fast to a close.
He breathed his last at a quarter before one o'clock.

In accordance with his expressed wish, the body was transmitted to

Moneymore. Much alarm was excited, as the disease was considered to have been cholera, which had for some time been prevalent. The morning he left home, while I was assisting him in the necessary preparations for his journey, he told me his bowels were rather relaxed, "but," he added, "you know this has always been useful to me." My reply was, that in such times I hoped he would be careful.

"The first intimation received in Dublin of his illness, was by a letter from our friend Mr. Learmonth to me, on receipt of which I instantly started for Edinburgh, and on my arrival, found, with heartfelt sorrow, that his remains had been forwarded to Glasgow the same morning, as it was not considered prudent to delay, owing to the excitement that prevailed.

"Such is a brief sketch of the last illness and death of my beloved uncle. Of him it may indeed be said, that as a physician or as a friend, he was without guile. Many, both in and out of the profession, when in difficulties, sought his counsel, impressed with the conviction, that he could and would give them sound advice to guide them safely through; nor did they ever find themselves disappointed.

"He was a man, naturally, of a most cheerful disposition, and his fine, expressive countenance so beamed with benignity, as to make the most favourable impression, even upon those who were strangers to him.

"I could, indeed, write a lengthened history of his genuine benevolence, and other Christian virtues; but from one to whom his unbounded kindness knew no limit, such would hardly be appropriate.

"His widow, who had ever been the most attached and devoted of wives, as well as the fondest and most exemplary of mothers, to my great satisfaction, resided after his death in my house. She died in her eighty-eighth year, having survived her husband thirteen years.

"To both, my thoughts ever recur with affection and gratitude, while I contemplate the memorable and happy events of which they were the source." (pp. 80-88.)

Thirteen years ago, Dr. Collins published his celebrated and invaluable statistics of 16,654 births occurring in his hospital practice; Dr. Clarke had previously given an account of 10,387 cases in his public practice; and in the volume before us, we have 3,878 cases which occurred in the private practice of Dr. Clarke, among the higher classes of Irish society, making in all a total of 30,919 births.

Diminution in Infant Mortality in the Dublin Lying-In Hospital, in Consequence of Improved Ventilation. "From the foundation of the hospital, in 1757, up to the period at which Dr. Clarke urged upon the attention of the governors the importance of the measures he advocated in 1783, of 17,650 infants born alive, 2,944 had died of convulsions, or, what is commonly termed, nine-day fits, as occurring within the first nine days after birth; thus, for the first twenty-five years the Institution was open, nearly every sixth child died. Such was the frightful mortality among infants in our Lying-in Hospital; and such it was which first prompted Dr. Clarke to examine minutely the mortality in similar institutions visited by him, in England and on the Continent, in 1783, from which he inferred that there must be something defective in the construction of the Dublin Lying-in Hospital, giving rise to a mortality found to be so immensely beyond that met with elsewhere; and thus, instead of forwarding the original design of Dr. Moss, the truly benevolent founder of the charity, of contributing to the preservation of young lives, producing quite a contrary effect.

"Dr. Clarke, in the communication which he had the honour of submitting to the governors, through the then consulting physician, Dr. Hutchinson, dated Brussels, 1783, declared his belief to be, that it was an accumulation of foul air, arising from an imperfect ventilation in the wards of the hospital, which proved so destructive of infantile health, and urged upon their atten-

ertain measures for the removal, as far as possible, of the vitiated here. The following letter was received by Dr. Clarke at Bourdeaux, 3, in reply from Dr. Hutchinson.

y dear Sir,—I have thus long delayed acknowledging your very g and acceptable letter from Brussels, that I might inform you about eps we are taking in consequence of your remarks. Dr. Rock (the master), Mr. Croker King (the consulting surgeon), and I, have had meetings, in order to have some digested plan to lay before the board, berations there are not generally the most advantageous to the despatch siness; nor do we think it prudent to divulge too publicly the dis- ble fact to which our attention has been called. *We find that almost e children who die, are carried off by what the woman call nine-day fits, ys attacking the infants within nine days from their birth—that when zed, all remedies hitherto tried have been found ineffectual.* Your rations have been maturely considered, and, in consequence of them, all recommend the apertures in the ceilings, etc. etc. [After stating neans to be adopted to improve the ventilation, he concludes:] You depend upon it, that (as far as in my power) due attention shall be paid ur remarks, and that the governors shall be informed to whom this ne inquiry is owing. I am, dear Sir, yours very sincerely,

o Joseph Clarke, M.D., Bourdeaux. F. Hutchinson.

he recommendation of Dr. Clarke was immediately carried into effect, e adoption of measures which provided for a free and easy passage of air at all times through the wards, and which were executed in such a ner as not to leave it in the power of nurse-tenders or patients to control; number of beds, also, in the large wards was reduced, and several ges were made in their construction, which rendered them more airy, more easily kept clean.[1] The consequences of this improvement in the ilation were (as reported by Dr. Clarke to the Royal Irish Academy[2] ears subsequently) immediate and most favourable, far surpassing the dations of all concerned. Of *eight thousand* and *thirty-three* children, subsequently to the wards being ventilated, only 419 died, that is about in 19½; or from five to six in the hundred, instead of the enormous ality before mentioned. Thus, by his skill and valuable suggestions, e 20,000 lives (humanly speaking) *have been saved*; as, had the mortality ifants continued *one* in six to this day, of the 138,436 (which is the total ber born alive up to the end of 1847), we should have had 26,406 deaths, ead of 5,704, as the hospital registry now shows. This is an astounding sufficient to arouse the attention of all those engaged in the manage- t of large institutions, in which numbers of young creatures are assem- together under the same roof, and also well calculated to enforce upon n the necessity of paying that attention to *ventilation*, to which it is so minently entitled. From the instant the ventilation was improved, up to present hour, *increasing* and incalculable benefit has been the result; in proportion as Dr. Clarke's suggestions have been more rigidly carried effect by the introduction of additional[3] measures to free the wards *impure* air, this most fatal disease has become more nearly banished, as trikingly demonstrated by the results of the hospital registry for the *twenty-five years*, compared with the *first twenty-five years* it was open re the ventilation was sufficiently attended to.

The total number of children born from 1823 to 1847, both inclusive, 54,074: of these only 501 died, being in the proportion of *one* in 108 rly, in place of *one* in six, as in the first twenty-five years. We may

[1] See Dublin Medical Journal, vol. ix, 1836. Article on "Trismus Nascentium", by Dr. ins.

[2] See the third volume of their Transactions.

[3] See page 518 of my Practical Treatise for Additional Measures, adopted in 1829.

further observe, that had the mortality from the period at which the hospital was opened, been in the proportion of one in *one hundred and eight nearly*, as during the *last* twenty-five years, the deaths would have amounted to little more than *one-fourth*, even of the reduced number of 5,704, as now recorded in the registry; and thus the number of lives saved would have been 24,939, instead of 20,000." (pp. 18-22.)

THE SUCCESS OF DR. CLARKE'S PRACTICE is, we believe, unprecedented. In one case only did he use the forceps! Of 3,147 patients attended in a period of nearly 47 years, only 22 died. Of the 22 deaths, only 3 died from peritonitis, and in some of them were the symptoms—those of the low, typhoid form of puerperal fever, met with in the hospital at different times. Five patients died who were confined prematurely, one of whom was in an advanced stage of phthisis. Two died from the immediate effects of hæmorrhage. In two cases of shoulder presentation, in which turning was performed, the patients died. The ten remaining fatal cases do not admit of classification: and are thus described. They lose much of their interest, from the want of an account of the post-mortem appearances:—

"Mrs. A.—Presentation of shoulder; the child was turned without difficulty. This patient had a good recovery for the first fourteen days; she died, however, on the twenty-first day from her confinement. During the seven days preceding her death, she had three attacks of uterine hæmorrhage to a considerable extent. The child was slightly putrid.

"Mrs. B.—Shoulder presentation. This was a relaxed elderly lady. The child was turned with much difficulty. She died in a few days afterwards.

"The following cases do not admit of classification, and are, therefore, given separately:—

"Mrs. A.—This was a twin case (both girls). The head of the first child (which was putrid) was lessened. The second presented with the feet, and was born alive. There was not any difficulty in the delivery, nor had the labour been protracted. She died on the eighth day. Extremely fœtid serous discharges took place from the uterus, and the pulse continued rapid and small from the time of delivery.

"Mrs. B. was confined after a labour of eight hours. She was attacked with pain in the region of the left kidney a fortnight afterwards, and died hectic at the end of a month from delivery.

"Mrs. C. was delivered of a male child, without difficulty in the labour. On the sixth day she had a paralytic stroke, and died convulsed on the tenth day.

"Mrs. D. was attacked with milk fever on the third day after delivery; had a second shivering on the fourth, and died on the thirteenth day. She had a strong tendency to mania from the time of her confinement, and was very despondent. The child presented with the breech; born alive; no difficulty.

"Mrs. E was delivered of a boy; labour natural; was seized with pyrexia on the third day, ushering in scarlatina. She died on the fifth day. The patient was attended by Dr. Evory, Dr. Clarke being at the time engaged with another. Three women died of scarlatina in the hospital the same year.

"Mrs. F. This lady had been greatly reduced previous to labour, by diarrhœa and grief. There was not any difficulty; the child, a male, was born alive. She expired in four hours after her confinement.

"Mrs. G. was confined without difficulty; the child, a male, alive. She had been labouring under dysentery for some time, which continuing unrelieved, terminated fatally one month subsequent to delivery.

"Mrs. H. This lady had a very easy labour. It was her first child, a girl, born alive. She died on the fourteenth day afterwards, of anomalous disease, most like bilious fever. She had been an invalid from birth; and laboured under a polypus in the rectum."

rs. I. This patient died from laceration of the vagina. The child's head ydrocephalic, and measured eighteen inches in circumference. The had not been tedious, but the uterine action was very strong. She fifty-one hours after her confinement.

rs. K. This patient also died from laceration of the vagina; the labour t protracted; the pelvis was defective." (pp. 43-4.)

PRESENTATION occurred nine times in 3,816 single births. Of these were premature labours—"three at the sixth month and one at the h. *Three* of the four were putrid. In two of the nine, the foot down with the arm; five of the nine children were born alive; one of ne was still-born, but not putrid—in this case there had been considerable haemorrhage before delivery; six of the nine children were turned. e three premature cases at the sixth month, in the two of them that putrid, the breech was brought down without introducing the hand into terus: in one of these the arm was removed, and the breech brought by the crotchet; in the other, the uterine action was strong, and, by assistance with the crotchet, it was got down. Dr. Clarke was the ractitioner to recommend this mode of delivery, in preference to version, the child is putrid; the safety of the mother is thus much less en-ered.[1]

n the third case, at the sixth month, where the child was alive, the of delivery is not noted. Of the nine cases of arm presentation, all nothers recovered. Two additional cases, in which the shoulder pre-d, and the children were turned, are already recorded in the abstract of leaths of mothers. The proportion of presentation of the shoulder or it may be observed, is one in 347 in Dr. Clarke's private practice; eas in hospital we had one in 410.

PRESENTATION OF THE FEET. In single births, there were thirty-six nces in which the feet of the child presented, which is in the proportion e in one hundred and six (in hospital I had one in one hundred and ty-nine). Of these, ten were boys, twenty girls, and in six the sex was noted. Twenty-eight of the thirty-six were born alive—viz., eight fifteen girls, and five in whom the sex was not noted. Two of the y-six were still-born, but not putrid; one, a boy, a *first* child, the other l, where there was great want of expelling power in the uterus, requiring manual removal of the placenta also. Six of the children were born d—viz., one boy, four girls, and one where the sex was not stated. Of hirty-six children, *twelve* were *premature* births, of which six were born and six putrid. Of the six born alive, one was at the eighth, two at the th, and three at the sixth month; of the six putrid, two were at the th, and four at the sixth month. In one case, where the child was born at the sixth month, the liquor amnii had been discharged three days ously. In one case, at the full period, it was complicated with placenta ntation, and in another with the funis.

PRESENTATION OF THE BREECH. In forty-nine cases the breech presented, h is in the proportion of one in seventy-eight of the single births. In ital we had one in sixty-eight. Of the forty-nine children, *sixteen* were born, seven of which were *putrid*. Seven of the sixteen were boys, four hich were *putrid*; nine were girls, three of which were *putrid*. Twelve e forty-nine were *premature* births, of which seven were born *alive*—viz., at the seventh month, and three at the eighth. Of these seven, three girls. Of the five premature still-born children, two were at the sixth three at the seventh month. Four of the five were putrid, and three of ive were boys. This leaves eleven of the sixteen still-born children at full period of gestation; of these, four were boys, one of which was

[1] See Dr. Collins's Practical Treatise, p. 71.

putrid. Of the three not putrid, one was a first child, and of large size. There was not any obvious cause to assign for the state of the other two. Of the seven girls, two were putrid. In two, the head was hydrocephalic; with one the mother had convulsions. Of the two remaining, in one the head was got away with great difficulty, and in the other there was no obvious cause.

"Placenta Presentation. The placenta presented in nine cases, in each of which the hand was introduced, and the child turned, except in one instance, where, on the introduction of the hand, the feet were found lying above the placenta. Seven of the nine children were born alive. Of the two still-born, one was at the full period of gestation, and the other at the eighth month. There was not any difficulty in the delivery of either. Both the still-born children were males; and of the entire number, six were males, one was female, and in two the sex was not noted. In the case it which the feet presented with the placenta, there had been occasional hæmorrhage for some weeks before delivery; child alive. In a second case, where delivery was effected at the end of the eighth month, there had been occasional hæmorrhage for seven weeks previously; child alive. In a third case, the hæmorrhage had also been severe; child alive. In a fourth case, already recorded in the abstract of deaths, there was considerable hæmorrhage for three weeks before delivery; child alive. The second instance of death under this head, in which there was found a total separation of the placenta, and no opportunity for treatment afforded, can hardly be classified with ordinary cases. All the other mothers recovered well.

"Nine cases of presentation of the placenta, out of 3,847 deliveries, is a very large proportion. In hospital, we had *eleven* in 16,414; and Dr. Clarke, in his hospital report, gives four in 10,387. Thus it will be observed, that in *hospital* the proportion is one in 1,492, whereas in *private* practice the proportion is one in 427; and this we should anticipate, it being notorious that quietness is essential to patients labouring under hæmorrhage, the apprehension of danger from removal to hospital causing many to remain in their homes.

"Accidental Hæmorrhage. Four cases of accidental hæmorrhage occurred. In three, on the membranes being ruptured, the discharge was checked, and labour in a short time succeeded. In the fourth case, alarming hæmorrhage came on at the end of the eighth month, in consequence of fright from a thunder storm, and the child was turned. Three of the four children were born alive. In one of the cases where the membranes had been ruptured, the child was still-born. Three of the four were premature births at the eighth month. All the mothers recovered.

"The proportion of accidental hæmorrhage is also considerably greater in private than in hospital practice—in the former being *one* in 962, and in the latter, one in 1,262.

"Hæmorrhage previous or subsequent to the Delivery of the Placenta: also Retention of the Placenta. In the following section are included cases of hæmorrhage occurring between the birth of the child and delivery of the placenta; also cases of retention of the placenta, requiring manual interference, in some instances accompanied with hæmorrhage, in others not; and in addition, cases of hæmorrhage subsequent to the removal of the afterbirth.

"There were twenty-five cases of retention of the placenta; seven of these occurred to the *same individual*, who, out of ten deliveries, in seven required manual assistance, for the removal of the afterbirth. In two of these there was hæmorrhage. In another instance, it was met with twice in the same patient. Of the twenty-five cases, the retention was accompanied by hæmorrhage in seven—one of which was a premature labour, at the sixth month, wherein, at the expiration of two and a half hours, the afterbirth was got away with the finger; in another, the feet of the child presented: this was the only preternatural presentation, where the placenta was retained. In *one* of the twenty-five, the child's head had been lessened, and in *two* the children

born putrid. All the labours, with the exception of the one noticed, at the full period of gestation. In *seven* of the twenty-five the retention wing to the irregular or hour-glass contraction of the uterus; in one of there was hæmorrhage, and in another the child's head had been ed, as already stated. In the eighteen instances where the placenta was ed without hæmorrhage, the hand was introduced, in almost all, at the tion of an hour and a half subsequent to the birth of the child. All others recovered favourably.

With regard to hæmorrhage subsequent to the expulsion of the afterbirth, was not any death from this occurrence. A few cases are noted where ss sustained produced exhaustion and faintishness, for two, three, or four but all yielded eventually to treatment—nor is it stated to have pro- d, in any instance, to a very alarming extent. The occurrence of rrhage at this period, so as to require particular observation, was rarely ith.

hat Dr. Clarke, out of so vast a number of deliveries, should not have ended any fatal result from retention of the placenta, or from hæmor- either previous or subsequent to its expulsion, is a fact which cannot o impress the profession with a conviction of his profound practical ledge. We doubt not that the diligent application of those principles and instruction, for ensuring the perfect contraction of the uterus, first ated by him, by pursuing, with a hand on the abdomen, the fundus in its contraction, until the fœtus be entirely expelled, and afterwards uing for some time this pressure, to keep it, if possible, in a contracted contributed largely to this favourable result. We know of no preven- f such importance in obviating retention of the placenta or hæmor- previous or subsequent to its expulsion. The safety, too, and speedy ry of the patient is intimately connected with the due contraction of mb after the child has been expelled.

WIN BIRTHS. Thirty-one twin births were met with, or in the propor- f *one* in 124; whereas in hospital our proportion was *one* in 68, which rly one-half greater. Of the 31 cases *twelve* gave birth to two boys— to two girls—*six* to a boy and girl, and there was one at the sixth where the sex was not noted. In *nine* instances both children presented ally; in *nine* one presented naturally and the other with the feet; in ne presented naturally and the second with the breech; in *three*, the resented naturally and the second preternaturally, but the exact pre- ion is not stated; in *one*, at the sixth month, the presentation is not , and in another the children were expelled before Dr. Clarke arrived. instance *both* children were still-born, one of which was putrid. In ther instances, the *second* child was still-born; in another, the first child utrid and had the head lessened, while the second child was born alive; as the only case in which instrumental delivery was required, as also the only case followed by fatal results to the mother; the labour was vere, nor was there any difficulty in the delivery (see particulars in of deaths). In twenty-six of the 31 twin cases both children were alive, leaving the proportion of still-born *one* in 12—in hospital it was eight, or one-third more. In *five* of the 31 cases the labour was *pre-* e, viz. two at the sixth month, and three at the eighth; this is in the tion of one in six—in hospital it was one in nine. Of the five pre- e labours, in two both children presented with the feet, viz.—one at the and *one* at the eighth month; in one at the eighth month, both were l presentations; in another at the eighth month, the first was a natural ntation and the second preternatural; in the remaining one, at the month, the presentation was not noted. In three instances, the placenta child first born was expelled before the birth of the second; the en were born alive.

"PRESENTATION OF THE FACE, AND OF THE FACE TO THE PUBES. Forty instances occurred, in seven of which the face presented, and in thirty-three the face was turned towards the pubes. Five of the children were still-born, four of which presented with the face to the pubes; one was, at the seventh month, putrid; in a second, the funis prolapsed, the pelvis was defective; in a third, no cause could be assigned, as there was not any difficulty in the labour; in the fourth, the labour was protracted, the patient very feeble, and the uterine action quite inadequate to the expulsion; the forceps was tried but without effect, after which the head was lessened. In the *fifth* case the face presented, the pelvis was undersized. This was the *same* patient already noticed, where the funis prolapsed in a previous labour with the face to the pubes. On the present occasion the head was lessened, after sixty hours labour. No other difficulty was experienced; the labour in almost all was easy and of short duration.

"PROLAPSED FUNIS. There were six cases in which the funis prolapsed; three of the children were still-born, one in which the face was turned towards the pubes, and is noticed under that head, where the pelvis was defective; a second in which the labour was severe, and continued for sixteen hours; and a third in which the frontal and parietal bones were absent. In three instances the head presented—in one the head with the hand—in one the feet, and in one the head with the face to the pubes. Four of the children were girls, one a boy, and in the defective child the sex was not noted.

"CONVULSIONS. Two cases of convulsions occurred; in one the patient had *three* fits previous to the birth of the child; the breech presented, and it was still-born. In the second case the patient had but one fit and that subsequent to delivery; the feet presented; it was born alive. Both mothers recovered favourably. It is a very singular fact, that the only cases met with should have been preternatural presentations. Only *one* case of convulsions occurred in the hospital, where the child presented preternaturally, during twenty-one years, in which term 48,379 women were delivered.—See Dr. Collins' Practical Treatise, page 200.

"LABORIOUS AND PROTRACTED LABOURS. There were eighteen cases of laborious labour, in twelve of which the child's head was lessened; in two of these the pelvis was very defective, under three inches; in one the chin was to the sacrum, and although the uterine action was very powerful, no progress was made; two cases are recorded under face presentations with defective pelvis; in the sixth the labour was protracted to ninety hours; in the seventh to eighty; in the eighth, delivery was effected at the end of thirty-six hours severe labour; in the ninth at the end of forty hours; in the tenth, after twenty-four hours from the dilatation of the os uteri, the head was hydrocephalic, and in two the duration of labour is not noted. In these cases Dr. Clarke had assistance from professional friends. One of the eighteen was delivered with the lever; child still-born. In the remaining *five* cases of very severe and protracted labour, instrumental delivery was not had recourse to; one was seventy-two hours in labour—child alive; one forty hours severe labour—child alive; one thirty-six hours after full dilatation of the os uteri—child alive; one seventy-two hours—child still-born, it was very large, and the period of gestation had been protracted seven days beyond the nine months; one forty-eight hours—child still-born. All the mothers recovered favourably. Some additional cases of tedious labour are noted, but not of such a nature as to require any remark.

"Such is a brief enumeration of the instrumental deliveries in Dr. Clarke's practice, extending over the long period of *forty-four* years, including *three thousand, eight hundred, and seventy-eight* births. This is in the proportion of one in 298, so that it is obvious he did not consider a frequent resort to instruments, in order to effect the *hasty* delivery of the patient, necessary to ensure safety, and that necessity alone induced him to use them. It may be observed he only used the forceps once, and that without completing the

ery. If we seriously reflect upon the happy results to the *mothers*, the practice pursued by this distinguished physician as regards the use struments, and then carefully examine the succeeding section upon ren *still-born*, and find here equally happy results (as of the 3,816 *single* s, there were only *forty-two* children still-born of those that had arrived e full period of gestation, or in the singularly small proportion of *one*), we cannot fail to discover a number of *astounding* truths, sufficient to our *artificial* advocates, and make them pause until *they can supply* professional brethren with a series of facts equally satisfactory.

When Dr. Clarke commenced practice in Dublin, it is a well-known fact th my friend Dr. Labatt, who is fully acquainted with the circumstances, ly substantiates), that almost every accoucheur then, in any amount of ice, invariably carried the lever, or forceps, in a pocket expressly made he purpose, so as to have either instrument in readiness for use in every they were called upon to attend, so necessary then were these instru- s generally considered.

We doubt that any physician ever attended a greater number of patients similar rank of life, which arises from the lengthened period during h Dr. Clarke was enabled to pursue his professional duties, as also the e manner in which he was engaged. When we look to the truly urably results, we require no other proof to convince us of the profound which enabled him to conduct so vast a number of cases to so happy mination. The deaths were in the proportion of *one* in *one hundred and ty-three* deliveries; and when we examine into the cause of death in the ty-two cases recorded, we find that there were *three* from peritonitis, *five* phthisis, *one* from hectic fever, *one* from scarlatina, *one* from a paralytic e, *one* from diarrhœa, *one* from dysentery, and *one* from anomalous se, thus leaving *eight* deaths as the results of childbirth, or in the pro- on of one in 477.

How seldom should most practitioners be found to use instruments, if the essful course pursued by Dr. Clarke were universally aimed at. Is it worthy of our best consideration, with the invaluable statement before hat, in an extent of practice in the upper ranks of life perhaps unex- ed, there is *not one single instance of death* resulting from *laborious* or *acted labour*. This is a practical *fact*, which ought to be carefully recol- d, and seriously weighed, by most of our Continental brethren, who use uments in every 5th, 10th, 15th, 20th, or 30th labour under their care, the object of *expediting* delivery; as also by some of our own country- whose unsound doctrines, inculcating mischievous interference to ote *hasty* delivery, the unquestionable truths here recorded clearly de- trate to be unjustifiable, and most uncalled for. Should not this inex- ibly important record for ever silence those who venture to publish crude fanciful opinions, unsupported by any data from their own experience ding similarly happy results. It affords me infinite satisfaction to supply truthful registry of facts, for the universal and serious consideration of profession. These truths speak in language the most convincing, and , when studied, leave an indelible impression.

STILL-BORN AND PREMATURE CHILDREN. The children still-born may be dered with advantage after the subject of laborious labours. Of the 6 single births, there were one hundred and twenty still-born, or in the ortion of one in thirty-two. Only *forty-two* of the one hundred and ty were at the *full* period of gestation, nineteen of which were boys, and ty-three girls. Of the nineteen boys, six were putrid. Of the twenty- girls ten were putrid. Of the forty-two still-born at the full period, y-eight may be found recorded under the following heads, viz.,—laborious

See Dr. Collins's Letters to Dr. Simpson, *Prov. Med. and Surg. Journal*, 1848; also, Simpson's reply in same Journal.

labours, convulsions, prolapsed funis, face presentation, breech, feet, and arm presentation, hæmorrhages, and mothers dead. Of the four remaining, one was caused by an upset in a carriage; one occurred where the labour was natural, and only of twenty-four hours' duration; and in two the head was hydrocephalic. *Seventy-eight* of the 120 were *premature* births, *sixty-five* of which were *putrid*, viz.—seven at the 5th month, twenty-two at the 6th, twenty-four at the 7th, and twelve at the 8th month. Of the sixty-five putrid, *thirty* were male, twenty-two female, and in thirteen the sex was not noted. *Thirteen* of the seventy-eight premature children were not putrid, viz.—four boys, five girls, and four in which the sex was not noted.

"Five children were still-born in the *twin-births*, all at the full period of gestation, which see under that head.

"In addition to the seventy-eight premature *still-born* children, there were *one hundred premature* children born *alive*, viz.—nineteen at the 6th month, thirty-seven at the 7th month, and forty-four at the 8th month; of these, fifty-six were boys, thirty-four girls, and ten in which the sex was not noted.

"Of the *total* number of *premature* children, both alive and still-born, viz., 178, *ninety* were males, *sixty-one* females, and in twenty-seven the sex was not noted. If we deduct the *premature* still-born from the total still-born, the proportion will be reduced two-thirds, or to one in ninety-one.

"The *proportion* of children born *prematurely* in the upper ranks in life, is much greater than that observed in hospital. This observation holds good also as regards children born in a *putrid* state. Of the 120 still-born, two-thirds were premature, and more than two-thirds of the 120 were *putrid*. In hospital we had about *one-fourth* premature, and rather less than *one-half* putrid. This fact powerfully proves the greater delicacy of constitution in the upper ranks of society, engendered by the mode of life pursued, coupled with other circumstances; as, notwithstanding the numerous casualties to which the lower orders are necessarily exposed in the laborious pursuits they are compelled to follow, a much greater portion of their offspring arrive at the full period of gestation in a healthy state. The practical lesson is obvious in the treatment of those who live in luxury, and often without any kind of healthful exercise.

"Of the *total* number of patients confined under Dr. Clarke's care, viz., 3,847, three thousand eight hundred and sixteen gave birth to *single* children, of which 1,949 were boys, and 1,840 girls; in twenty-seven the sex was not noted. Thirty-one gave birth to *twins*. The proportion of *male* to *female* children is not by any means so much greater in the upper ranks of life as amongst the lower classes. In hospital, the proportion is about twelve males to eleven females, whereas the above is as eighteen to seventeen nearly."(pp.46-62.)

History of the Case of the Princess Charlotte. The following letter from Dr. John Sims to Dr. Clarke gives an authentic narrative of this lamentable catastrophe. As all concerned are now removed from this world, there is no impropriety in Dr. Collins publishing the document; and there is no restraint on our saying, that the Princess might most probably have recovered, had her condition been early understood, and proper means been resorted to, to excite contraction of the uterus. She evidently died from hæmorrhage, a small quantity of blood being sufficient, in her exhausted state, to prove fatal:—

"London, November 15, 1817."

"My dear Sir,—I do not wonder at your wishing to have a correct statement of the labour of Her Royal Highness Princess Charlotte, the fatal issue of which has involved the whole nation in distress. You must excuse my being very concise, as I have been, and am very much hurried. I take the opportunity of writing this in a lying-in chamber.

"Her Royal Highness's labour commenced by the discharge of the liquor amnii about seven o'clock on Monday evening, and pains followed soon after; they continued through the night and a great part of the next day, sharp,

, but very ineffectual. Towards the evening, Sir Richard Croft began to
ct that the labour might not terminate without artificial assistance, and
ssage was dispatched for me. I arrived at two on Wednesday morning.
labour was now advancing more favourably, and both Dr. Baillie and
lf concurred in the opinion that it would not be advisable to inform Her
I Highness of my arrival. From this time to the end of the labour the
ess was uniform, though very slow, the patient in good spirits, pulse
, and there never was room to entertain a question about the use of in-
ents. About six in the afternoon, the discharges became of a green
r, which led to a suspicion that the child might be dead; still the giving
ance was quite out of the question, as the pains now became more
ual, and the labour proceeded regularly though slowly. The child was
without artificial assistance, at nine o'clock in the evening. Attempts
for a good while made to reanimate it, by inflating the lungs, friction,
ath, etc., but without effect; the heart could not be made to beat even
Soon after the delivery, Sir Richard Croft discovered that the uterus
contracted in the middle, in the hour-glass form, and, as some hæmor-
e commenced, it was agreed that the placenta should be brought away
troducing the hand. This was done about half-an-hour after the delivery
e child, with more ease and less loss of blood than usual. Her Royal
ness continued well for about two hours; she then complained of being
at stomach, and of noise in her ears; began to be talkative, and her pulse
me frequent, but I understand she was very quiet after this, and her
calm. About half-past twelve o'clock she complained of severe pain at
hest, became extremely restless, with a rapid, irregular, and weak pulse.
is time I saw her for the first time, and saw immediately that she must
It has been said we were all gone to bed, but that is not a fact. Croft
not leave the room, Dr. Baillie retired about eleven, and I went to my
chamber, and laid down in my clothes at twelve. By dissection, some
ly fluid (two ounces) was found in the pericardium, supposed to be
wn out in articulo mortis. The brain and other organs were all sound, except
ight ovarium, which was distended into a cyst, the size of a hen's egg; the
-glass contraction of the uterus was still visible; a considerable quantity
ood in the cavity of the uterus, but those present differ about the quan-
so much as from twelve ounces to a pound and a half; the uterus
nded as high as the navel. The cause of Her Royal Highness's death is
inly somewhat obscure; the symptoms were such as attend death from
orrhage, but the loss of blood did not appear to be sufficient to account
fatal issue. It is possible, that the effusion into the pericardium took
e earlier than was supposed, and it does not seem to me to be quite
in that this might not be the cause. As far as I can judge, the labour
d not have been better managed. That I did not see Her Royal Highness
early, is awkward; and it would have been better that I should have
introduced before the labour was expected; and it should have been
rstood, that when the labour came on I should be sent to, without wait-
to know whether a consultation was necessary or not. I thought so at
ime, but I could not propose such an arrangement to Croft. But this is
rely *entre nous*.

I am glad to hear that your son is well, and, with all my family, wish to
emembered to him. We were happy to hear that he was agreeably
ried. I remain, my dear Doctor, ever yours, most truly, JNO. SIMS."
P.S. This letter is confidential, as perhaps I might be blamed for writing
particulars without the permission of Prince Leopold." (pp. 68-70).

r. Robert Lee has republished in the *Lancet*, 28th April, 1849, p. 451,
n addition to Dr. Sims' narrative, the following account, which first
ared three weeks after the event. He thinks that "there is internal
ence to prove that the information was communicated by Dr. Baillie,
the verbal report furnished to him by Sir Richard Croft."

"The editors having been sufficiently apprized that the profession expected from them some account of this case, the lamentable termination of which has cast such a settled gloom over the British empire, immediately on learning that the physicians who attended it did not mean to publish any statement (a resolution on the propriety of which, under the circumstances, they perfectly coincide), strenuously endeavoured to obtain every information respecting it from such sources as could be depended upon. Their exertions have been successful, and they are now enabled to present a report to their readers, which may be regarded as strictly authentic.

"The Princess Charlotte previous to her confinement was in good health, and immediately under the eye of her accoucheur, Sir R. Croft, who resided at Claremont for three weeks up to the moment in which she was taken ill. Dr. Baillie, also, was in attendance, chiefly, we have been informed, on account of a promise exacted from him by the Princess, that he would be near her on this occasion. Her spirits were excellent, and she anticipated only the most favourable issue of the event, which was hourly expected.

"She was first made sensible of her approaching delivery at seven o'clock on Monday evening, the 3rd of November; but the labour-pains were so inefficient, although acute, as scarcely to evacuate the water, which had ruptured the membranes at the commencement of the labour—a circumstance, however, which every accoucheur knows prognosticates nothing either uncommon or untoward. In this manner the labour proceeded slowly for twenty-six hours, the Princess being frequently up, and walking about, from finding that the pains almost left her when she was in the recumbent position. About this time, also, judging from the inefficiency of the pains, and the little progress made in the labour, we understand that Sir Richard Croft suspected that there were either twins, or that there existed some irregular action of the uterus; and as it was probable a consultation might ultimately be required, he wrote to Dr. John Sims, requesting his immediate attendance. He had in the meantime provided everything that could be wanted, should it be found expedient to have recourse to artificial delivery.

"Dr. Sims arrived at Claremont at two o'clock in the morning of Wednesday, but did not then see the Princess; and as the cause of this has been grossly mis-stated, we think it proper, in justification of an honourable man, and so highly respected a member of the medical profession as Sir Richard Croft is well known to be, to state, that we have been informed, from a quarter which we must credit, that it was proposed by Sir Richard to Dr. Sims, that he should then be introduced to the Princess; but both Dr. Sims himself and Dr. Baillie thought his presence at that time could not be productive of any benefit, but might agitate the patient. Dr. Sims therefore declined entering the lying-in room. No consultation was at this period necessary, as the labour was evidently advancing, though slowly; but on hearing the statement of the situation of the Princess from Sir Richard Croft, Dr. Sims concurred in the opinion, that everything should be left to nature.

"About noon on Wednesday, it was first suspected that the child might be dead, or that it might be born in a state of suspended animation, and every known means of recovery were immediately prepared. Still the labour continued to be scarcely progressive, the pains being such as tend to forward birth rather by moulding the head, so as to admit of its easy passage, than by forcible expulsion. When this was completed, the pains became more efficient; and, at the termination of fifty hours from the commencement of the labour, the Princess was delivered, by natural efforts, of a still-born male child. No great discharge followed the birth, but it was soon discovered that the uterus was acting irregularly, and taking on the hour-glass contraction; and an unfavourable separation of the placenta was anticipated. This likewise, in some degree, accounted for the protracted character of the labour.

"At half-past nine o'clock, a discharge of blood occurred. Dr. Sims, who was then employed in an adjoining room in endeavours to reanimate the

what is repulsive in the pasteboard, pads, whalebone, and mohair, in which our women are encased. The following is Mr. Hare's discourse on stays.

"STAYS. The use of the zone or girdle, the type of our modern stays, is of very ancient origin; and it is probable that in all ages of civilized life, the sex has used some article of this kind, from an idea that it was convenient for the support and graceful carriage of the figure. On their first employment, stays were of simple construction, and were destitute of their present objectionable properties, being resorted to, almost exclusively, for the purpose of suspending from them other articles of dress in any easy, flowing, and graceful manner; and whilst restricted to such uses, and not drawn unnecessarily tight, they would not be likely to be attended with any mischievous effect. It is probable that most of the errors and foibles of mankind have had their rise from some motive or notion, not culpable in itself, but deserving censure only from being carried to excess; thus, the unnatural construction and excessive compression of stays have led to an accumulation of bodily suffering and deformity, of the extent and consequences of which few were, or are, fully aware.

"There are, at the present time, thousands who, ignorant of the misery they are inconsiderately providing for themselves, are daily sacrificing health, and sometimes shortening life, to the mere vanity of desiring to possess what a vitiated taste calls "a fine figure." Our promenades, public streets, and places of fashionable resort, afford abundant evidence of the sad effects resulting from the universal prevalence of this baneful practice. The notion that a woman is more beautiful with a remarkably small waist, ought long ago to have been exploded;—as well might we admire as beauties, the flattened heads of some tribes of Indians, or the extremely contracted feet of the Chinese. Genuine taste admires no such eccentricities.

"That women should experience a feeling of support from the use of stays, after wearing them from early childhood, admits neither of doubt nor surprise; the only wonder is, that they should feel comfortable without them even during the hours of repose.

"A moment's consideration of the anatomy of the chest, will shew still more forcibly the injurious tendency of stays, as ordinarily made, for while the termination of the eighth, ninth, and tenth ribs in long and yielding cartilages, and the want of any attachment of the anterior extremities of the two remaining ribs, increase the mobility of the chest, it will at once be seen how readily, from this very circumstance, the circumference of the waist may be acted upon by the strings used in the dresses of children, or the stays worn by females during childhood or whilst the body is in a state of growth; indeed, it is obvious there is but little power in those parts to resist even a very moderate degree of pressure.

"But modern stays are constructed with so little attention to the form of the body, that the pressure is the greatest upon the lower part of the chest, which is naturally the widest, whilst there is the most room at the upper part, where its diameter is the smallest; thus, in effect, inverting the order of nature, and causing a complete transformation of this important portion of the body, by making its base uppermost, and its apex downwards; they are also made so long as to cause injurious pressure on the pelvis, their tendency being, therefore, to turn the crest of the ilium inwards.

"There are other and striking evils resulting from tight lacing; by the pressure of stays, the functions of the vital organs are injured, and the whole frame is impaired; the bones of the chest being contracted, and their natural extent of motion diminished, prevent the free action of the lungs; the blood, not being sufficiently decarbonized by respiration, becomes deteriorated in quality, and consequently the various systems of the body suffer either in structure or function: the countenance ceases to have its healthy aspect; energy and muscular action become impaired; while palpitation of the heart, a quick pulse, and difficult respiration, with a much diminished breathing

of the chest, are usual symptoms where tight lacing has been long
ed in. The pressure and confinement of stays also produce great
nent of the functions of digestion, preventing the stomach from
in the proper direction on the reception of food, and also impeding
ral peristaltic motion of the intestines; and, in some extreme cases,
changing the form and position of the viscera, which are then pressed
the lower part of the abdomen, and so compressed that their proper
the animal economy cannot be adequately performed. Hernia also,
wn, is sometimes induced by this improper pressure.

he stays scarcely allow of lateral motion, or indeed of any other with
the muscles of the chest and back often become atrophied, and as
e gradually gives way, the other bones of the chest become displaced
ir natural position, the sternum being in some cases forced inwards,
s the reverse; the ribs, instead of having the graceful curve which
urally possess, become—in the part below the axillæ—completely
l, and their extremities, instead of being directed forward, project
irectly downwards, so that the conical form of the chest is, as has
been stated, inverted.

author has made repeated measurements with a view to compare the
erence of the waist and the width of the stays of a great number of
and has uniformly found a great difference between the two,—the
often measuring from two to four inches more than the latter; and
ays are unyielding, and yet made to meet closely behind, it is clear
difference must be made up by the compression of the body. This
periment which all parents have it in their power to make, and the
ess of which they can ascertain.[1] But it should at the same time
mbered, that the difference between the circumference of the waist
length of the stays, does not represent the entire amount to which
st is compressed; because, by the habitual use of tight corsets, the
ome more or less *permanently* contracted, and to this contraction no
nding expansion occurs when the stays are unlaced. The difference
d, is really the amount of the mobility remaining when the pressure
ved—not from the ribs in their natural condition, but from a chest
more or less injured, and permanently contracted by the use of the
Need we then be surprised that the female figure is so frequently and
ntably deformed? Rather ought it to excite our astonishment that
of those subject to the causes should escape the consequences.

ne unfortunate sufferers, by placing soft pads in the lateral curve,
tly pass years without its being known that such distortion exists;
ir lives, under these circumstances, must be spent in a state little
misery, on account of the languor, debility, and mental as well as
uffering, which they endure.

much less objectionable than stays, are the various instruments
es made use of to amend or protect the shape, which, so far from
ng, they tend ultimately to injure; indeed, most of such inventions,
of being useful in the prevention of the deformity, often accelerate
ress. If parents were acquainted with the natural state of the human
as to enable them to comprehend the objectionable nature of these
ilar devices, they would reject the use of such restraints, and clothe
ildren in dresses, which would not press injuriously on any part of
ne.

ight lacing be attended with such mischievous effects to young females
men in general, the evil is still more increased when practised during
iod of the pregnancy. Whoever attentively considers how much the
health of the offspring depends upon the mental and physical condi-
the mother whilst in this state, must be convinced that all undue
ssion of the body is highly improper: it is as inimical to the welfare
mother, as to that of the child, not only impeding the full develop-

[1] The measurement should be made in the morning before dressing.

ment of its members, but rendering its birth more dangerous in proportion as the circumference or diameter of the pelvis of the former is narrowed—modern stays, by extending so low as to embrace the hips, having a direct tendency to produce this effect. The uterus, as it increases in bulk, necessarily elevates the viscera, which, being forcibly pressed by stiff, unyielding stays, cause of course great inconvenience to the mother. Defective secretion of the milk, the food designed by nature for the infant, and so essential to its nourishment and preservation, may also arise from the same cause. The difficulty of breathing likewise, a frequent complaint with pregnant women, is greatly increased by the restraint in which the respiratory organs are placed by the additional restriction.

"Notwithstanding all that has been said and written on the evil effects of modern stays as they are usually worn, and although they have been proved, in the clearest manner, to be one of the most formidable causes of diseases of the spine (*See the chapter on Lat. Curv.*), yet an attempt to induce females altogether to discard so common an article of attire, would be exacting more than can perhaps be expected. What is to be hoped for is, that medical men, by showing the mischiefs attending their use in their present form, may induce the sex to make such alterations in their construction as will, in a great degree, obviate the attendant evils.

"The chief objects to be had in view, in constructing these articles so as to be innoxious are, to render the pressure on every part as slight as possible, in order that there may be the utmost freedom of motion; to admit of the greatest amount of pliability; and to ensure a proper adaptation to the figure. In growing girls, instead of the stays being tightly girt behind by laces, they should be secured in front by buttons or strings; in adults, there may be no objection to laces, provided the stays be, in other respects, of proper contruction, and in this case the lacing should be in front, a strip of India-rubber webbing, about an inch in breadth, being inserted on each side the lace-holes, and a similar one, of double breadth, down the middle of the back; the gussets for the part of the stays covering the hips,[1] and for that supporting the breasts must be made of the same elastic material; the shoulder straps should pass directly over or upon the shoulders, and be so constructed as to lie flat upon them by being inserted obliquely into the stays. It is not necessary to enter into further details as to the material and construction of stays, except to observe that the fabric should be of a firm but not altogether unyielding nature, and that they should be constructed so as to allow free motion in every direction. The only whalebones required will be two thin ones to protect the lace-holes, and two, equally thin, on each side, to prevent the stays from puckering; by these means, if the stays are at all proportionate to the size of the body, active exercise, which is absolutely necessary for increasing the strength of growing girls, can be freely used, and tight lacing will be next to impossible.

"There are other portions of female dress which are injurious as regards their effect upon the health and form of the body; these are, the strings of petticoats, aprons, etc., which are generally drawn very tightly round the waist, thus contributing to the ill effects which have been previously detailed. Parents ought to be especially careful that the articles of dress be suspended by buttons and pins, and that strings should be, as much as possible, dispensed with, especially during the period of growth.

"A custom at present prevails to a very considerable extent, of using a leathern belt buckled round the waists of boys when they commence wearing their clothes of woollen cloth; this practice, unless adopted with great care, has a direct tendency to produce a contracted state of the chest and upper part of the abdomen, similar in effect, though not in degree, to that produced by corsets in growing girls; it is hoped that it is only necessary to point out the evil that it may be avoided." (pp. 28-36.)

[1] It is still more proper that the stays should not embrace the hips at all.

AL DIGEST OF THE BRITISH AND FOREIGN MEDICAL JOURNALS.

ANATOMY AND PHYSIOLOGY.

ART OF MAKING TRANSPARENT PREPARATIONS OF THE SPINAL FOR SHOWING THE ROOTS OF THE NERVES BY THE MICROSCOPE.

By Joseph Swan, F.R.S.

dullary matter of the spinal cord is formed of meshes, very similar of portions of the brain. The grey matter of each quarter of the liates externally; the medullary matter intervenes between the rays ives it into its meshes, and in this manner the two kinds become y combined. The radiation of the grey is best seen in a thin dry al section, which has been allowed to dry exposed to the air, and ds made smooth and varnished. A fresh slice covered with thin es not answer, as its character becomes in a great degree lost by

oots of the nerves, just about their collection into fasciculi, appear on face of the spinal cord immediately underneath the pia mater as a coarser wavy threads; from this part they pass rather obliquely the medullary matter towards the grey in finer wavy threads, which nicate very much with each other, and with the meshes of the medul- tter, and the extension of these amongst the grey. In some of the tions distinct white filaments are seen ramifying over veins which coloured by the blood they had contained. Every filament is accom- by an artery; and when this is more prominent, there is a more harsh on of the nerves. When the preparation has been made very trans- the nerves disappear and become involved in the meshes of medullary ; at the same time the arteries also become obscure. From the ap- ce of the preparations, it seems as if there probably existed a conti- layer of roots from one end of the spinal cord to the other. The wavy ance of the roots on the surface and of those descending into the sub- of the cord, may be supposed to resemble very distantly the fibrils of ots of plants. Their character is peculiar, and different from any other ements of nervous matter, but by no means less beautiful.

spinal cord receives blood not only by its anterior and posterior arte- ut by very very numerous minute vessels which accompany the fibrils ry nerve into its substance: these do not divide directly amongst the of the nerves, but, at one side or underneath each layer, give off es which form somewhat circular brushes of capillaries, and these e insinuated amongst the roots of the nerves.

pia mater and arachnoid membrane have both a cellular appearance, may be mistaken for the meshes of medullary matter. This cellular rance is obliterated by applying Canada balsam, but restored again by ng this off with spirits of turpentine: this effect is very convenient in g dry preparations of the nerves, as the membranes do not then much ict the demonstration of the minute roots underneath.

the spinal cord (especially in large animals, as that of the ox, from my preparations have been chiefly made) does not dry sufficiently parent for exhibiting the roots of the nerves. I have been under the sity of somewhat modifying the process, which I previously communi- , for making transparent preparations of the brain; and I will endeavour scribe the change required as briefly as possible.

e spinal cord is to be cut into pieces of one or two inches long, so that

each may include all the roots of one or more nerves in each quarter. The dura mater is to be removed, and the nerves preserved as far as the ganglia. Each portion of the cord is then to be divided through the median line, and each half again between the appearance of the anterior and posterior nerves, so that there will be four quarters separated. As the roots of the nerves enter rather obliquely, it is necessary to cut off, close to the nerve, a somewhat triangular portion of each side of one of the quarters, so as to make the preparation a flat piece, containing the nerves and their continuation through the medullary and grey matter. The piece thus cut is to be placed on a glass slide, and dried before the fire on a plate covered with paper. In two or three days it is to be raised from the slide with a thin scalpel, and the soft matter underneath is to be carefully removed; it is then to be placed on a fresh slide, and gently pressed on this with the finger, and there remain until it is dry. When dry it is to be raised again from the slide, and turned over, that any matter preventing the transparency may be removed: this is known by holding it from time to time to the light. This process of clearing is facilitated, by moistening it with spirits of turpentine now and then dropped on it. If it had become uneven on the surface in drying, another slide may be pressed on it gently so as to flatten it; it may then be examined by the microscope, and any matter still obscuring it be removed. When it has thus been made sufficiently transparent, a little thick Canada balsam is to be smeared on the under surface, and by means of the ball of a finger moistened with spirits of turpentine, pressed on the slide so as to remove any vacuity of air-bubbles which otherwise make the preparation uneven under the microscope, and give the idea of a membrane or some different substance intervening amongst the rest. The next day a small drop of Canada balsam is to be smeared over the surface of the preparation with a finger, and immediately after two or three drops of spirits of turpentine; and this process of applying the balsam and spirits of turpentine may require to be repeated two or three times for giving sufficient clearness, and guarding it from mould and atmospheric changes. Although it wants to be transparent, it does not require to shine as if it were varnished, and therefore the balsam and spirits of turpentine are directed to be wiped off with the finger. I have been several times very much mortified to find that the beautiful and delicate nervous roots had vanished after the application of Canada balsam, but have had afterwards the satisfaction of discovering that they returned after I had removed this with spirits of turpentine.

Another preparation may be made by cutting off a portion of the surface of the spinal cord, with very short ends of nerves attached to it, and very little of the medullary matter underneath. It is to be dried, and treated like the other preparations, and when finished it will show the nerves very beautifully, as they are collecting themselves into fasciculi; and some parts of it will be found only a coarser representation of the more internal roots. Another preparation of a similar kind may be made by leaving the medullary surface uppermost, when nearly the whole of the medullary matter has been removed.

It is often necessary to put the spinal marrow in water for taking away the extravasated blood, and then it becomes very soft, and probably will be spoiled: in this case, or if putrefaction be approaching, it may be put into a mixture of two-thirds of common vinegar and one of alcohol, and may remain in this, after it has been cut into pieces, for a few days or weeks, and then be made into preparations, but it is much longer in drying than by the first method. This process is worthy of particular attention, as the difference between the white and grey matter is well preserved by it, and the preparation capable of being made thinner and more transparent; consequently, however, more care is required in removing the soft matter underneath, and performing the other manipulations. The preparation thus made is also more quickly finished; for when all the opaque matter has been removed

alpel and spirits of turpentine, the Canada balsam may be at once on under the surface, and the piece be placed permanently on

, according to the preceding directions, acquired about a hundred resting preparations; and although they have cost me almost infi- and pains, I feel amply rewarded, by having succeeded in seeing ie most interesting points of anatomy far better than I had pre- lone by any other means. [*Medical Gazette*, October 12, 1849.]

STATE OF THE FIBRIN IN BLOOD.

RN affirms that the fibrin in the blood is united to the corpuscles, free; his proofs are, that when frog's blood is filtered, the fibrin in the form of flocculi, or thready coagula, and the microscope at these are formed out of the granules which are met with in the nd have the characters of fibrin; moreover, when the fibrin is removed by beating, these corpuscles can no longer be found. The corpuscles are formed from the colourless molecules, found so tly in the lacteals and lymphatics. M. Horn believes that these s by aggregation produce true lymph-corpuscles, which, indeed, in rliest stage, appear like conglomerations of extremely little mole- The molecules dissolve away as the corpuscles progress, the cor- become flattened and smooth, and are, lastly, converted into blood- es. M. Horn considers, also, that pus-corpuscles are nothing but tions of these molecules; just as in the normal state the fibrin is d into globulin, so in pathological conditions it is changed into *Schmidt's Jahrbuch*. Band viii. 1848; as in *Provincial Medical and l Journal*).

C. H. JONES' RESEARCHES ON STRUCTURE AND DEVELOPMENT OF THE LIVER.

researches of Dr. C. H. JONES are contained in Part I. for 1849, *Philosophical Transactions*. We copy the following abstract and itary from the *British and Foreign Medico-Chirurgical Review* for .

urvey of the various forms of hepatic structure has led the author to owing CONCLUSIONS:

The liver, in all vertebrated animals, may be regarded as consisting creting parenchyma and excretory ducts. These two portions of the re not continous with each other, but disposed simply in a relation aposition; the substance of the lobules being made up of secreting yma and of blood-vessels, whilst the ducts are confined to the inter- spaces. 2. The action of the liver seems to consist in the trans- of the bile, as it is formed, from cell to cell, until it arrives in the ourhood of the excretory ducts, by which it is absorbed. This action ably slow, and very liable to be interfered with, contrasting remark- ith the kidney, where a particular apparatus is added to ensure teness and rapidity of action. 3. The secretion of the hepatic cells liable to be retained within the gland, either in the cells or in a free This circumstance, as well as its structural peculiarities, seem to ut the liver as approximating to the class of ductless glands. For ne reason, it seems highly probable that a part of the secretion of the directly absorbed into the blood which traverses the lobules. 4. In ification of the true glands, the liver seems to occupy the lowest posi- he highest being assigned to the permanently tubular, such as the and testis. 5. From the condition of the secreting parenchyma in instances, we learn that the secretory process by no means requires

the formation of perfect cells in order to effect its peculiar changes; these may certainly occur in blastematous matter, if a nucleus only be present. 6. The condition of the liver is in great measure dependent on the intensity of the respiratory process; its products being unused, accumulate in the gland, often to a remarkable extent; its function is therefore not only vicarious of respiration, as formerly supposed, but preparatory, and to some extent subsidiary.

"In an appendix to the paper, Dr. C. H. Jones thus replies to an objection which may be urged against his views, on the ground of the very small extent of contact between the ultimate ducts and the cells of the liver, which makes it difficult to understand how the bile which they secrete should be received into the efferent ducts. 'In answer to this I observe:—First, that I believe much of the secretion of the cells is directly absorbed into the blood traversing the lobules. Secondly, that I think it is by no means clearly proved that the secretion of the cells is perfectly-formed bile; in many instances it clearly is not; thus in most fishes, and in the fatty liver of the human subject, it is evident that the gorged parenchyma is full, not of bilious but of oily matter, *out* of which, however, healthy bile is elaborated. I have carefully examined the cells of the human liver, in organs which were quite healthy, without finding any evidence of the presence of bile in their contents; though, in congested livers, the yellow molecules are often very distinct in the interior of the cells. In the pig, rabbit, and dog, the cells appear as pale granular bodies, and do not, as far as I can perceive, exhibit the least biliary tinge, even after the addition of nitric acid. In the sheep, there is generally a good deal of oily matter in the cells, but no biliary. I do not of course deny that bile is often found in the cells, especially in states of congestion; but I conceive that in the perfectly healthy state, the complete elaboration of bile is effected principally by the nuclei of the terminal portion of the ducts.

["Some of these statements are rather startling, and we can scarcely reconcile them with our own observations, which have never led us to entertain any doubt that, in perfectly healthy livers, the cells of the hepatic parenchyma contain true biliary matter. Again, we must take leave to question the statement that biliary matter can be directly elaborated from oily matter; since we think that there is neither chemical nor physiological evidence to prove that such transformation is possible. On the contrary, there is much evidence of their entire distinctness of character and function; and if the blood do absorb any of the contents of the secreting cells, in its passage through the parenchyma, as suggested by Dr. C. H. Jones, we suspect that the matter thus taken up will be the oleaginous, rather than the true biliary. *Editor of Brit. & For. Medico-Chir. Review.*"]

TRANSPLANTATION OF TESTICLES.

In *Müller's Archives* is a most interesting paper with this title, by Professor Berthold, of Göttingen. He castrated six young cocks, of two and three months old, leaving the wattles, combs, and spurs untouched. From two of them (*a* and *d*) he removed both testicles. Thenceforth they took on the nature of capons, fighting very seldom and feebly, and giving the well-known monotonous capon crow. Their combs and wattles were pale, and little developed, and the head remained small. About five months after, they were killed; a small scar occupied the place of each testicle, and the seminal duct had degenerated to a mere thread. From two others (*b* and *e*) only one testicle was removed, the other left in the belly. In two others (*c* and *f*), both testicles were excised, but one belonging to *e* was transplanted into the belly of *f*, and, *vice versâ*, one of its testicles was transplanted into *c*; thrust amongst the bowels, and left there. All four retained the characters of uncastrated fowls; they crowed lustily; frequently fought with each other, and

r young cocks, and exhibited the ordinary inclination for the hens. bs and wattles developed like those of others.
k *b* was killed two months after; its single testicle was in the ordi- e, but had hypertrophied, and, on section, a white fluid exuded, which cells, but no spermatozoa. On the same day, the remaining three had -developed combs and wattles excised. The cock *c* at the same time, ved of the remaining testicle; and *c* and *f* examined in the ordinary in vain for the transplanted organ. The now fully castrated *c* never b or wattles, it ceased to concern itself about the hens, and fought with its own sex. *C* and *f*, however, reproduced both comb and and preserved their ordinary chivalrous demeanour. They were months after the transplantation. In *c* the testicle was found e colon and between the ends of the cæca. In *f* it was nearer their ut otherwise in the same situation. They were of large size, and large branches of the mesenteric vessels, which passed towards them. and then took the ordinary course, in relation to their seminal tubes. ing them, a normal seminal fluid exuded with the ordinary cells and zoa. The author concludes:—
t the testicles are transplantable, and reunite with living tissues ir separation from the body, not only at their ordinary site, but in mal situation.
e the grafted tree, the organ on this new place still preserves its properties, and secretes its specific fluid.
is well known, that after a division, a re-union of nerves restores and movement. And it follows, from these experiments, that as nion could not have been one of those originally divided, there are ific seminal nerves; that nerves only are requisite—a strong, nay, fatal objection to the theory, that would constitute the sympathetic c nerve, or a nerve in itself specifically organized with reference to n. [*Medical Times*, July 21, 1849.]

AND DEVELOPMENT OF THE UPPER GERMINAL LAYER IN THE OVUM OF VERTEBRATE ANIMALS.

REMAK has made the following communication to the Berlin Academy. he scutiform thickening of the germinal disc appears (the "embry- ild" of Baer,) three definite layers may be distinguished in the al disc. In this thickening, only the upper and the middle layers the under layer being not concerned in it. This latter layer, which the epithelium, not only of the intestinal tube, but also of the e, the cellular parenchyma of the liver, the pancreas, the kidneys, the , and the thymus, I propose to name the *gland-layer*. The scutiform parts of the upper and middle germinal layers grow together in their is. By this confluence, commences the axial plate or primitive streak , from which proceed the medullary plate, the primordial vertebral and the chorda. The medullary plate is thus connected with the rt of the upper germinal layer, while the primordial vertebral plates nnected with the middle layer. Both upper and middle germinal show a thickening, which encircles the axial structures, and is a of the double shield, not partaking in the forming of the axial plate. s" lamina abdominalis.") The author has not been able to convince , that a process of the free part of the upper layer covers the medul- late.
t free portion of the upper germinal layer which limits the medullary s neither,—as Pander, Baer, and others interpreted it,—the founda- f the abdominal walls, ("serous or animal layer,") nor yet, as others sserted, a transitory enveloping membrane. But it covers the embryo, thus *the foundation of the non-vascular and nerveless tegumentary*

coverings, the epidermis, the nails, the feathers, and the beak. The peripheric part clothes the cavity of the amnion; and, after the conclusion of the amnion, a process which separates itself from this, and surrounds the yolk, forms the so-called serous membrane. The name "horn-layer" (hornblatt) might best serve for this part of the upper germinal layer, which takes no share in the axial structures.

During the third day of incubation, the costal plates separate from that thickened portion of the middle germinal layer which defines the primordial vertebral plates; they are then apposed to a correspondingly thickened part of the horn-layer, so as to give rise to the cavity of the belly. The horn-layer thus loses its individuality, and becomes a covering of the costal plates. The limbs which spring from these latter, in growing, carry before them this covering. Even at the seventh day, a considerable thickening may be seen at the free ends of the hinder extremities, corresponding to the foundation of the nails.

It is not difficult to follow, throughout, the metamorphosis of the horn-layer into feathers, nails, and epidermis.

The feathers first appear as wart-shaped excrescences of the skin, which forthwith take a tufty or hairy appearance. Every such excrescence consists of a soft bolster, which is formed of cells, contains loops of blood-vessels, and is covered by a solid and proportionably thick covering derived from the horn-layer. On treating this latter with water, cells may be recognized on its outer surface. When the excrescence becomes longer, the horny covering acquires a disproportionate thickness. At the tenth day, this covering offers a singular contrast between an inner, solid, and opaque layer, which consists of columns projecting from the vascular axial space, and an outer transparent layer of cells which is loosened by water. Almost always, numerous star-shaped pigmentary figures are discernible in the inner layer; it is only in the quite white feathers that they are entirely absent. This layer, lying next to the vascular stem, is the groundwork of the feather, while, on the other hand, the outer epithelial layer is the basis of the colourless skin, on the rupture of which the coloured feathers come to light.

The commencement of the nails is similar. On the eleventh day the horn-layer is thickened on the points of the toes; and, from the twelfth day forward, one may perceive the separation of this layer into a solid horny layer of nail, and a soft, easily separable covering. Here also a very extraordinary histogenetic contrast is exhibited between the cells of the nail, and those of its tegumentary covering. In the transparent cells of the latter, which are dilatable by the action of water, the nuclei may be seen as proportionally small, solid corpuscles. Towards the sixteenth day, the hardened nail-layer exhibits large, transparent, vesicular nuclei, which are surrounded by a dense, finely granular cell-content. In the horny coverings of the foot, in the beak, and in the epidermis generally, the same separation of the horn-layer into two strata may be discerned.

Since the sweat-glands and sebaceous follicles of the mammalian skin are absent from birds, and research on the glands of the rump has hitherto afforded little result, it will require a comparison with the mammalian embryo, to decide whether the horn-layer partakes in the development of the cutaneous glands, and is thus, in this additional respect, comparable with the gland-layer of the intestinal tube. [Here a foot-note by the author states, that in the embryo of the pig, he has seen the sebaceous glands produced from the tubular hair-germs, which are in their turn developed from the deep, pigmentary part of the horn-layer.] But, in any case, the observations now communicated exhibit a novel and surprisingly simple law of development for the higher vertebrata—to wit, a middle layer which develops the nerves and vessels; a central nervous system; and two non-vascular and nerveless outer layers. (*Müller's Archiv.* Heft. II, 1849, as translated in *Medical Times.*)

PRACTICE OF MEDICINE AND PATHOLOGY.

ETES. MELLITUS IN CHILDREN, TREATED SUCCESSFULLY BY SULPHATE OF IRON.

HEINE, of Berlin, has recorded, in the *Journal für Kinderkrankheiten*, and June 1849, two cases of Diabetes occurring in children. The is a slightly abridged translation.

TES is one of those obscure diseases, the nature of which, in spite of deavours, and notwithstanding our improved knowledge of therapeu- little known to us, as if it had just commenced to occur. We know an excretion of sugar in the urine, not resulting from disease of the but from some chemical action in the blood; but beyond this, we thing. The expression Diabetes itself shows our ignorance of the for it may be applied correctly to *Diabetes albuminosus*, or to *Dia- pidus*, as well as to *Diabetes mellitus*. While albuminuria, and some- mple diuresis, are not rare in children between five and fourteen age, Diabetes mellitus has been seldom met with—indeed never in under five years old. Prout (on *Stomach and Renal Diseases*, 5th 30, note) says, that in seven hundred cases of Diabetes mellitus, which e under his observation, he met with only twelve persons from eight y years of age, and only one under eight—a child five years of age. ave observed two cases of Diabetes mellitus in children; and we con- m worthy of being recorded, partly because they both show that a l derangement of the functions of digestion and assimilation was, doubt, one of the causes of, or at least in intimate relation with, the and also because, in both, the promotion and improvement of diges- the use of sulphate of iron, had a remarkable effect.

I. Albert Arnold, aged nine years, the son of a dealer in victuals, ng and healthy when born. He was nursed by his mother, who ap- have been, at that time, somewhat troubled with a cough, and to d of phthisis two years after his birth. Up to four years of age, he e healthy; he then had measles, and thenceforth began to grow He appears to have been neglected by his step-mother: he was sent f the lowest schools, and had to go in all weathers, scantily clothed, rom the school, which was at a considerable distance. In the morn- had a crust of black bread at school: at noon, he generally had pota- turnips, but no meat. He was also obliged to eat this food very Now and then his father gave him dainty bits, generally consisting indigestible substances, as old fat sausages, bacon, etc. Sometimes, got from his father a small glassful of brandy to refresh him. All erated very injuriously on the boy: he became weakly, lean, melan- nd dull; he was constantly tired and wearied; his appetite became r, sometimes entirely failing, sometimes being so voracious that he at four or five slices of bread without being satisfied. At the same e alvine evacuations were very scanty. On two occasions, he had of spontaneous salivation for eight or ten days, during which the ontinually streamed, and flowed from his mouth while he was asleep. ves alone had the effect of arresting it. After some time, the boy feverish in the evening, and was no longer able to go to school. He y little medical treatment; but, as he appeared still to grow worse, l to get out of bed about ten times every night to pass urine, thus dis- the rest of his step-mother, she determined to take him to a phy- She came to me with him; and I ascertained that the boy was ng under a diuresis, which a chemical examination of the urine showed, t a doubt, to be Diabetes mellitus. Sugar was detected in large pro- in the urine.

I commenced the treatment with small doses of alteratives: I prescribed very small doses of calomel, with rhubarb and magnesia, till the stools were somewhat increased: in the intervals, I gave doses of grs. x of phosphate of soda, with gr. ss. of ipecacuanha. The tongue gradually became cleaner: the boy appeared to have less thirst, and the appetite became more regular; the alvine evacuations were more copious, and the quantity of urine excreted was less. He was not obliged to rise so often at night. I gradually left off the calomel, but continued the phosphate of soda and ipecacuanha for some time, and then commenced the use of sulphate of iron. The boy had taken this for scarcely two days, when a remarkably rapid improvement appeared. He passed urine much less frequently, and had to rise only twice, at most, in the night. On being tested, the urine presented no trace of sugar. The patient continued the use of the sulphate of iron for five or six weeks, desisting for short intervals, and completely recovered.

In the following case, the sulphate of iron appears to have had an almost specific effect:

Case II. Daniel Abrahamson, aged seven years, was brought to me by his mother. This patient appeared much emaciated; his eyes were sunken, and surrounded by a blue margin; his flesh was flabby, and his tongue much loaded; he had a disagreeable sweet taste in his mouth, and appeared dull and low-spirited. His mother, a Jewess, informed me that she had been, with her two children, in search of her husband, who, she had heard, was in good circumstances in London; but she had been unsuccessful, and was in great poverty. While there, she and her children were seized with fever. She was in an hospital for four or five weeks, during which time she was frequently delirious. In the mean time, one of the children—a girl—died of fever produced by starvation, and the boy was dangerously ill in the same hospital with herself. She was assisted, by some charitable persons, to return to Hamburgh, and thence to Berlin, where she was provided with gratuitous medical attendance, medicines, and nursing. I soon ascertained that the patient was suffering from Diabetes mellitus: he passed four or five quarts of urine in twenty-four hours, in which a large quantity of sugar was detected. At the same time, the intestines were torpid; digestion was impaired, the appetite failed, or was perverted, and the thirst was very intense. I prescribed pills of compound extract of rhubarb, with sulphate of iron. The latter was given at first in doses of half a grain, and gradually increased. Matters amended with remarkable rapidity under this treatment. By the end of five days, the quantity of urine was diminished; and on the eighth day, no trace of sugar could be detected in it. The appetite improved, and the strength of the patient increased. When the appetite and digestion had improved, more nutritious food was gradually given, until he was able to take meat and wine. After a treatment of about four weeks, the boy was perfectly cured.

We do not know whether sulphate of iron would have such a beneficial effect on adults and old persons, as on children. In the latter, it is worthy of closer investigation; and we have not been able to forbear from bringing this medicine prominently into notice.

ERYTHEMA CHOLERICA ("ROSEOLE CHOLERIQUE" OF RAYER).

M. Le Gouarts directs attention to this affection in the *Revue Médico-Chirurgicale* for October, 1849. He considers that it is of importance in the prognosis, and that it is in the strictest sense of the term a critical occurrence. The paper possesses considerable interest. Dr. Barth details two interesting cases of this description in his valuable memoir contained in the *Archives Générales de Médecine* for September, 1849, entitled, "*Le Choléra Morbus observé à la Salpêtrière pendant les mois de Mars et Avril, 1849*".

SURGERY.

JARY NECROSIS OF LUCIFER-MATCH MAKERS; PROPHYLAXIS BY INHALERS, AND BY TURPENTINE EXPOSED IN SAUCERS.

e London Journal of Medicine for October, page 961, we gave an of the views which Dr. Helfft entertains regarding this affection. ve now to lay before our readers abridgements of two papers on the ry Necrosis of Lucifer-match makers, the first by Mr. Henry Taylor, ingham, and the abstract of a lecture at St. Bartholomew's Hospital, Stanley.

Henry Taylor's Paper. Case 1. Henry C——, aged forty-nine, e-match manufacturer for the last eight years. He found no material from the work till March 1848, when, after suffering some degree of e observed a discharge of purulent matter from his mouth, arising e front of the upper jaw. This pain was of an acute character, and ibuted it to having decayed teeth. I saw him for the first time on ber 1, 1848; he then presented a portion of his upper jaw-bone, which come necrosed, had separated, and been thrown off by the unaided of Nature. It measured in length around the arch two inches and a d in depth one inch; it embraced, in one piece, nearly the entire of ces of the two superior maxillary bones, with the alveolar cavities for r incisors, two canine and four bicuspid teeth; it formed the floor of tril, and anterior part of the roof of the mouth, and extended backward to its junction with the palatine bones. The cavity left in the mouth removal of bone was considerable; but, by applying frequent pressure the soft palate raised, and by washing the mouth with detergent and ent lotions, it soon healed, and left much less deformity than was ed; no reproduction of bone to any evident extent took place. At ne of his first presenting himself to my notice, he was very un- l, highly nervous, thin, emaciated, sallow, and of a pasty countenance. s put upon generous diet, with tonic and stimulating medicines. injunctions were given to keep himself from the workshops, and to oderate exercise in the open air daily. His health improved; but I bserved that the lower jaw on the right side began to swell. The gums red and inflamed, and had a spongy appearance; he complained of constantly cold and shivering, but had no distinct rigors; there was enderness of the jaw, which he could scarcely bear to be touched. A of dead bone showed itself on the inner side, close by the second tooth; a loosened molar tooth was extracted, local and general anti- stic treatment was adopted, with the external application of fomenta- poultices, etc. He now for some short time took medicines of an nt and anodyne character; but his system soon became so exceedingly s and irritable, that he had to resume the tonic and stimulating treat-

He was fearful of having the most trifling examination of his jaw and he refused any surgical treatment. Symptoms of extreme general y and prostration of strength soon after showed themselves, attended profuse diarrhœa and harassing tenesmus. The symptoms noted on ry 11, 1849, were—Great swelling of the lower jaw, extending up the the face; excruciating pain up the side of the head, including the numbness of the lower lip, on right side, not extending past the line; breath exceedingly offensive, with a profuse discharge from the of saliva, mixed with fœtid matter; cannot swallow more than ned fluids; pulse feeble; bowels relaxed; urine scanty and high- ed; suffers but little from thirst; is highly nervous; jumped out of the night, in a state of delirium; hand tremulous; unable to hold a

spoon with any liquid. Beef-tea, jellies, etc., were given with wine, and beside the anodyne and strengthening medicines, injections with starch and opium were administered, from which great comfort and relief were derived. Some few days after, matter formed at the base of the jaw, which was evacuated. The basis of the bone was distinctly felt necrosed, but he made a positive refusal to more being done than the insertion of a probe. His health afterwards very gradually improved, although his system continued weak and unnerved. The violent diarrhœa, tenesmus, etc., subsided, and he was enabled to take his food as usual; but the wounds continued open, discharging matter occasionally mixed with blood, which at times was very profuse.

On September 25, 1849, he again came to consult me, having had, for the two or three preceding days, much pain on the left side of the lower jaw, which was considerably swollen. The substance of the bone at its base felt materially thickened, and there was every appearance as if similar mischief had commenced in the body of the bone on this side, to that on the opposite. His pulse was quick and feeble, and his whole system indicated great constitutional disturbance; indeed, there was every reason to believe that the poison had powerfully manifested its destructive effects on this side also, although for the last ten months he had entirely withheld from work, and but seldom entered the workshops. The portion of dead bone exposed to view within the mouth, on the right side, had much increased, being at least one inch in length. The discharge from the wounds had rather decreased in quantity.

Case II.—James B——, aged forty-five, superintending assistant to Mr. C——, who has the credit of introducing the system of lucifer-match making into England. Has been engaged in this work continuously for fifteen or sixteen years; he is of a sanguineous temperament; of a full, plethoric, and gouty diathesis, and habituated to excess in drinking. He was seized with pain and swelling of the lower jaw, on the left side, in the early part of the month of July 1849. When he first came to consult me, the swelling extended far up the side of the head. I found the bone highly inflamed and thickened, being excessively tender to the touch. Upon making a careful examination of his mouth, I found the gums looking red and spongy, and separating from the teeth, having an appearance somewhat similar to when mercury has been taken in a sufficient quantity to produce ptyalism; but the marginal ulceration was not so distinctly marked; the teeth on the side affected, loosened, including two of the incisors, the whole of which were in a fearfully neglected and encrusted state, and the breath was sadly offensive. Most of the loose teeth were removed, several being easily extracted with the finger and thumb. Antiphlogistic treatment, with purgatives and salines, were prescribed, with the external application of fomentations and poultices. He continued under my care till the latter part of the month, when he left this neighbourhood, and went to his friends in London, where he soon after placed himself under the care of Mr. Simon and Mr. Dixon, in St. Thomas's Hospital, from whom I have learnt that the bone has since become extensively diseased.

Remarks. Cases of a similar kind to those related above have fallen under the observation of, and been published to the medical world by, Drs. Heyfelder and Dietz, of Nuremberg, and F. W. Lorindser, chief surgeon in Vienna—places where the phosphorus match manufacture is carried on extensively. In this country, Professor Taylor, in his admirable work on poisons, has briefly referred to the subject; as also Mr. Stanley, in his recent able volume on Diseases of Bones.

The work in which the two preceding individuals were engaged being of a comparatively new character, it may be desirable to show to what extent their bodies were exposed to the poisonous vapours of phosphorus, whilst occupied in their several vocations.

lutics which each of them undertook to perform were those of "the
Phosphorus, combined with oxymuriate of potash, glue, etc., made
aste, is placed on a metal plate, at a temperature sufficiently high to
liquid. Into this preparation on the heated plate is dipped the
of matches, ready prepared with sulphur; so that the dipper has
d over the plate, and inhale the abundant fumes which are elimi-
So completely are the clothes and dress of the person impregnated
e phosphorus, that at night, in the bed-room, when dark, they appear
scent. Beside the quantity which has to be inhaled during the
dippings (which, in Mr. C——'s factory, continues for half-an-hour,
e or four different times of the day), the person has to prepare the
nd for the dipping, during which process much of the phosphorous
given off. During the drying of the matches when made and dipped,
our is eliminated in considerable quantities into the same room in
he usual work is carried on. Lately, however, means have been con-
in this factory, to prevent so great an inhalation of the poisonous
and I have further suggested, what in all probability will be carried
ect, that a mask be worn over the face of the dipper, which shall have
nd a tube to pass out of the building into the open air, which mask
provided with valves for exhaling and inhaling, like those attached
chloroform inhalers.

evident, from the two preceding cases, that phosphorus, when imbibed
e system in a slow manner, acts as an irritant poison.
e was doubtless, in each case, great constitutional disturbance, and the
pon the nervous system was very marked. At times, C—— suffered
y from nervous twitchings of a very distressing character, extending
is legs, awakening him out of his sleep. He complained of overpower-
pression of spirits, being, as he expressed himself, "quite unmanned".
xcess of mercury or arsenic had ever been taken into the system in
of the above cases. M. Dupasquier believes that this disease of the
is not dependent upon the vapour of phosphorus (which he considers
essing no poisonous action), but upon the presence of arsenic, which
eyes to be used in the manufacture of lucifer matches. In this opi-
can scarcely anticipate he will have many followers; for in each case
of, there was an absence of cardialgia, vomiting, inflammation of con-
ve, suffusion of the eyes, etc., symptoms which would have been present
senic been the poison which had slowly been received into the system.
most assuredly a singular circumstance, that phosphorus, which holds
ortant a part in the structure of bone, in form of phosphate of lime,
produce such a destructive action upon bone, when received into the
in excess. Professor Taylor says, "these effects have been attributed
respiration of the vapours of phosphorus, which are supposed, by be-
g acidified, to act chemically upon the bones".

ther interest is attached, in the consideration of these cases, to know
r the combination of sulphur with the phosphorus may increase the
ctive influence of the vapour. Leopold Gmelin, the Professor of Che-
y in the University of Heidelberg, in his Hand-book, lately translated
Cavendish Society, points out in a very extended manner, the numer-
ombinations of sulphur with phosphorus, and shows the various com-
ny and decompositions which occur when they are mutually acted
This point I must entirely leave to the more profound knowledge of
hemists; there is, however, abundance of facts demonstrated, showing
ome of the various gaseous products are extremely volatile and de-
ive.

attentive chemical enquiry may be the means of throwing some light
e rationale of the *treatment* which ought to be pursued in the early
. My friend, Dr. Hutchinson, whose opinion I at all times most highly
ciate, in a note to me, says,—"The more I think of the case, the more

I feel inclined to believe in the importance of administering freely the muriatic acid; if in any way we are to be influenced by the effects it has upon dead bone, there is a little reason to suppose it may have some slight effect upon what appears to be the poisonous influence upon bone, of an excess of phosphorus, and either circulating in the system, or locally absorbed by those bones most exposed to its influence; it may also be of service by exciting a general beneficial constitutional effect".

Mr. Stanley's Lecture. Mr. Stanley brought before the pupils of St. Bartholomew's Hospital, on November 10, a patient who had lost the whole of his lower jaw by Necrosis. The man, who looked about five or six-and-twenty, had been six months in the hospital, and traced the affection of the jaw to the vapours of phosphorus, to which his trade of a lucifer-match maker had exposed him. The whole body of the lower maxilla, with one of the condyles, were exhibited, and presented several necrosed fragments, in which the original shape of the bone could easily be recognised. Mr. Stanley mentioned that the condyle, which was wanting to complete the necrosed jaw, had very probably been absorbed. The patient's appearance did not, at first sight, betoken such considerable osseous loss, and the usual contour of the face was tolerably preserved. This small amount of deformity was accounted for, by Mr. Stanley, by the thickening of the tissues in contact with the jaw, and an abundant fibrinous deposit which Nature had thrown out, in her endeavour to repair the loss of bone. New bone, however, is never thrown out in this form of Necrosis. Mastication, in this instance, is carried on tolerably well; the food must be reduced into small fragments, which the patient prepares further by pressing them strongly against the roof of the mouth with his tongue. The function of nutrition seems to be going on tolerably well with this patient, for he looks in pretty good health. It may, then, be inferred, that this imperfect preparation of the alimentary bolus proves sufficient for the digestive functions.

The painful feelings excited by the sight of this new victim of our vaunted improvements in various branches of manufacture, were greatly mitigated by the announcement Mr. Stanley made regarding the prophylaxis. Workmen in lucifer-match manufactories have now a chance of escaping the baneful effects of the evolution of phosphorous acid, by placing saucers filled with oil of turpentine about their work-rooms. As oil of turpentine is a solvent of phosphorus, it is expected that it will absorb the vapours which do so much mischief. This precaution is taken at a large lucifer-match manufactory in the neighbourhood of the London Hospital, and the very best results are expected from it. This case, so instructive in itself, was rendered peculiarly valuable in being brought forward by the distinguished author on *Diseases of the Bones;* and we were sorry that the time and place did not allow Mr. Stanley to enter fully into the different questions which such a case naturally gives rise to; for instance, as to whether the fumes act primarily on the periosteum, or whether the jaw is secondarily affected. This question (left unsettled in the work just alluded to) appears of some importance; for if the constitution be affected first, the poison might be counteracted by throwing appropriate chemical agents into the blood. The two cases mentioned in the *Lancet*, (Nov. 10, p. 498,) by Mr. Henry Taylor, of Nottingham, will prove very valuable to those who may investigate this subject in all its bearings. Two men, who were employed for a considerable time at the manufactory before they experienced any ill effects,—one in the upper, and the other in the lower jaw,—suffered Necrosis. These men were "dippers"; and it is but fair to suppose that the hand would have been the first to suffer, had the effect been direct. It must, however, be confessed, that the fact of the *upper* maxilla being affected, in Case 1, militates against the following passage, which we find at p. 75 of Mr. Stanley's treatise: "Against the opinion that the phosphoric vapour acts merely as a local excitant, the objection

n urged, that it produces no effect on the periosteum of the bones of
al passages, through which the vapour is directly inhaled." That these
ould not be classed among ordinary Necrosis of bones, is sufficiently
, the entire absence of the least attempt at the regeneration of bone
he most characteristic differential feature. Nor could this regenera-
ll take place, as, to use Mr. Stanley's words, (p. 75,) "there is here a
ant of the essential conditions for the reproduction of bone—namely,
nation in healthy structures, with health in the general system." The
umice-stone-like, newly-formed osseous substance, found by Dr. Hey-
n the outer surface of the portions of bone which he extracted in
cases, likewise points, as Mr. Stanley remarks, to an affection distinct
e usual death of bone. [Abridged from *Lancet*, Nov. 18, 1849.]

CLEFT PALATE: AND THE OPERATION OF STAPHYLORAPHY.

London Journal of Medicine for January and February contained
acousson's admirable memoirs on this subject. In the second paper,
he gives a note from Mr. R. Quain, intimating his approval of the
l of preliminary section of muscles. Mr. Quain has, in the *Medical Times*,
y given his opinions at greater length, in connexion with the history
cases of Cleft Palate requiring different modes of treatment. An
ment of this interesting paper is subjoined.

1. William Turner, aged 16, admitted into hospital to be treated for
'alate. He is of ruddy complexion, somewhat strumous in appearance.
ually had good health, but the cervical lymphatic glands generally are
d; and there are now discernible at the side of the neck below the
, the scars remaining from suppurating sores, which formed in con-
with inflamed glands two years ago. In infancy, when he was suckled,
lk flowed from his nostrils "almost as fast" as he drew it into his
. But the quantity that thus escaped gradually lessened as he ad-
in age, so that by the time he could feed himself, very little passed
nose. At present none of his food is diverted from its proper course.
ech is mostly unintelligible, except to those who have been accus-
to it. The soft palate is divided in its whole length into two equal
The parts are red-coloured, and of good thickness. At the upper or
r end they are attached close together to the hard palate. From this
iverge at once, and hang wide asunder; but, when upon being bid, the
man makes an effort to swallow, they are observed to approach one
r, and even to touch at the lower ends—not in their whole length.
ny palate is entire, except that there is a very small angular notch at
iddle of its posterior margin, where the flaps of the velum are close
er. The tonsil on the right side is enlarged.

means of a scalpel, curved on the flat, and double-edged, a free incision
ade upon the back part of each of the two halves of the soft palate, at
half an inch from the edge. Some difficulty was experienced in effect-
is first step of the operation on the right side, in consequence of the
f the velum being forcibly drawn outwards to the side of the pharynx,
uch narrowed. This happened especially when the part was touched
the knife; and, at the same time, a narrow depression or dimple was
ed on the under surface of the palate, doubtless marking the insertion
levator palati on the posterior surface, the muscle being in a state of
l contraction.

the next place, three silk sutures of good thickness were introduced, the
through the uvula near its base, the highest about half an inch from
ard palate. They were passed by means of a bent needle, of the kind
ructed with a long handle and of rather small size. The needle carrying
suture was made to puncture the left half of the palate on the lower or
l surface, about a quarter of an inch from its edge. When the velum

had been penetrated, the loop of string was caught with a pair of forceps passed back in the cleft, and was so held while the needle was withdrawn. A loop of thin silk was passed in the same way, at the same height, in the opposite division of the velum, and this loop was used to convey the suture thread from behind forwards into the second half of that structure. The edges of the soft palate being pared, the ends of each of the sutures were drawn together and fastened with a surgeon's knot, a pair of forceps being used to prevent the ends of the threads from slipping while the knot was made.

On the evening of the operation, a degree of nausea came on, which was troublesome till the patient fell asleep. It was probably caused by a little oozing from the incisions on the back of the palate and from its edges. During the first following days, there was a good deal of swelling about the sutures. On the third day the highest of these was removed, and on the day after the other two were cut and withdrawn. It was now found that union had taken place to a considerable extent. The sides of the uvula, with those of the velum contiguous to it, were firmly united; and, about midway between this point and the hard palate, union was established for the space of about a quarter of an inch. Above and below the last mentioned adhesion there was an opening, and at the lower one of these a slight degree of ulceration was noticed. By the use of solid nitrate of silver, slightly applied when the surface became clean and repeated at intervals, the two openings soon became reduced to the size of pin holes, and these were closed after a heated wire had been passed through.

After the operation, and during several days, the patient was fed, at intervals of about eight hours, with bread in warm milk or beef tea. No solid food was permitted. Upon trial being made respecting the effect of the operation on the power of articulation, when the holes in the velum were closed, some improvement was evident, and it gradually increased up to the time the patient's attendance at the hospital was discontinued.

With a view to surmount the obstacles to the successful result of Staphyloraphy, as now detailed, modifications have from time to time been made in the operation; or rather, additions have been made since the operation was first introduced into surgery. Thus, in order to prevent or diminish the tension or dragging which was occasioned by the ligatures, incisions have been made into the velum outside the ligature holes. And in order to paralyze the muscular action during the healing process, the levator palati, palato-pharyngeus, and palato-glossus muscles have been divided. To Mr. Fergusson we are indebted for showing the necessity of dividing the muscles, and for suggesting the method whereby to attain the object.

It was then with a view to overcome the obstacles here noticed, that, in the case under our observation, an incision was made on the posterior or upper surface of each side of the velum palati, where the levator joins that structure; and, further, the incision was made of considerable length and depth. By an incision of this kind, not only is the muscle divided, but the over tension of the velum when the ligatures are drawn together is guarded against, as far, at all events, as any separate or independent incision for the purpose would attain this end. The single incision then accomplishes both objects.

No muscle besides the levator palati was divided. The reason is this: I am not satisfied of the necessity or utility of cutting the palato-pharyngeus and palato-glossus. They, in the healthy state of the parts, undoubtedly approach each other from opposite sides during deglutition, so as to close upon the alimentary bole, and they are, I apprehend, the agents in that approximation of the two halves of the palate which takes place during the attempt to swallow the saliva. We witnessed this fact in Turner; it is common in such cases. Influenced by these considerations, I restrict myself to the division of the levator muscle. In making the incision for this

, it will be well to draw the fragment of the velum, by means of the forceps, into the pharynx; for by this means, the part to be divided stretched, at the same time that the tendency of the muscle to narrow ate is counteracted.

e is no likelihood, I may add, of inconvenient hæmorrhage during eration. The internal carotid, the only artery of importance in the ourhood, is considerably behind the seat of incision.

h depends on the *proper application of the sutures*, and much atten- requisite in order that they shall be firmly fixed, retaining the flaps osition, but, if possible, without any straining of the tissues.

r the operation, even when completely successful, all that can be ex- is, to place the patient in such a condition, that he may effectively d to attain the art of speaking with distinctness. Turner, it should be had less than average facility in speaking, even as compared with affected with the same malformation. He failed especially in pro- ing letters which are formed with the tip of the tongue, and with the the teeth. "Sister," "Thames," etc., were scarcely to be recognized. ned, in watching him, as if the muscles of the fauces were engaged in nting the voice from passing through the nose, while those at the ante- rt of the mouth were not called into action at all, or very ineffectually. thstanding, however, the manifest want of aptitude in the patient, the lment, which is stated, in the narrative read to you, to have been appa- hen the sides of the palate had been completely closed, became a clear vement after he had been engaged with his family in practising the nciation of some words, of which Mr. Jackson, his dresser, kindly gave list. The improvement, as might be expected, is more decided and when the person is placed under the instruction of one of those gentle Mr. Poett, for example) who devote themselves to correcting faults of nciation. But from this advantage, hospital patients are excluded by xpense.

ss H. J. W., a female, aged 23, admitted into hospital on account congenital deficiency in the palate. When an infant, during the act of ng, the milk used to pass into her nose. She could not speak at all until as two years old, and then very indistinctly. In her childhood she was o whistle and sing a little, and to blow out a candle. She could not, and t now, pronounce the letters *g*, *k*, *s*, *x*, *q*, *c*; but still she speaks with ble clearness. She has suffered some years from irregular menstruation. e soft palate is entire at its middle, but the uvula is fissured, the two hanging close together, and at the upper end there is an oval opening, uring more than half an inch in length. At each side is an elongated tion upon the surface of the velum; this, at first sight, seemed to me to t from increased thickness, owing probably to the presence of greater unt of muscular substance; but on examining it with the finger, I came e conclusion, that the appearance arose from a degree of looseness in the caused by the position into which it fell when under examination. pt at the lower part of the uvula, the whole structure was much thinner paler than usual, and this condition was especially apparent at the edges ie oval opening, which seemed to be formed of nothing more than the le mucous membrane. The back part of the hard palate is defective, g widely notched up to within an inch and a half of the incisor teeth. patient states, that the opening in the velum was originally round, and t the size of a pea; and that it had no more than this size till about years ago, when an operation was performed by a surgeon with a view to it. According to her own account, she has since that time experienced e difficulty in pronouncing words. She adds, that while at all times she obliged to be careful in eating, she has, within the period referred to, compelled to be much more so; and now, unless she holds her head up n in the act of drinking, the fluid passes into her nostrils.

A single suture was passed through the uvula after the edges had been pared. The parts became united in a couple of days without any difficulty. At a subsequent period, a stopper of India-rubber was inserted into the aperture, and the patient then left the hospital. Two months afterwards, the following entry was made in the Case-book:—"She attended for inspection this morning. She cannot keep the stopper in its place for more than four days at a time, her mouth then becoming sore; she has no difficulty in removing and replacing it. Her pronunciation is evidently more distinct. She can pronounce all the letters that she previously could not, with the exception of the letter *t*."

I advised the use of a simple form of obturator for the opening which still remained. But, had the soft palate been of the usual thickness, and had there been also no material loss of substance around the opening, sutures would have been applied with every probability of a favourable result; and, considering that in this case, a large part of the velum was perfect, it would not, in my opinion, have been necessary to attempt the division of any muscle. An incision to a considerable depth, outside the ligature holes, would, however, be useful on the principle explained at a former part of this lecture, viz., to diminish traction, and the consequent tension of the parts.

PREVENTION OF THE ENTRANCE OF AIR WHEN REMOVING FLUID FROM THE PLEURÆ, PERITONEUM, AND CAVITIES OF ABSCESSES.

At a meeting of the *Société de Chirurgie* of Paris, held on the 14th of November, a letter was read from M. Racibórski, of which the *Union Médicale* for November 17th gives the following extract.

A wet, collapsed hog's bladder is fixed to the outlet of the canula which is to be introduced. When the trocar has sufficiently entered the cavity, the bladder must be supported by the left hand of the operator, the right being used to withdraw the trocar, and so allow the fluid to flow through the canula into the bladder. If the bladder be insufficient to contain the whole of the fluid to be withdrawn, the flow has to be stopped by pressing the side of the bladder against the outlet of the canula, whilst an assistant punctures the bladder in a convenient part, and thus evacuates its contents. By securing the opening by a ligature, the bladder may be made to serve for the evacuation of the whole of the fluid.

OBSTETRICS.

DR. E. J. TILT'S PAPERS ON ACUTE OVARIAN DISEASES.

portance we attach to the cultivation of the obstetrical branch of is evident from the space we have allotted to it in our Journal. lately reviewed Dr. Tyler Smith's work, wherein the component the science of midwifery were blended into one harmonious whole; iow engaged in giving our readers an account of Dr. Bennet's *n Inflammation of the Womb*; and we have thought it not unsuitable ve here a digest of Dr. TILT's important papers (*Lancet*, 1st vol.) on the Acute Forms of Ovarian Disease. In doing this, it ss to remark how cursorily this subject has been alluded to by and how little it is known to the profession. We must, however, r how small was our knowledge of the physiology of these organs until he last few years; and that we are indebted to the labours of our oraries—Baer, Bischoff, Pouchet, Raciborski, Martin Barry, Robert , for having so completely changed the face of ovarian physiology. he one should step forward and attempt to give a corresponding n to our knowledge of the pathology of the same organs cannot, e, excite our surprise; and we must admit that Dr. Tilt (by his lucid ment of facts little known,) has done more than any English author light on this obscure subject. His papers deserve to be placed along e admirable monograph of M. Chereau.[1]

ing from physiological considerations, Dr. Tilt begins by pointing out ortance of the ovaries; which are, throughout the serial chain of beings, ary organs of generation, to which are superadded, in the highest beings, ental portion of the oviduct to perform the office of fruit-holder. He he monthly ebb and flow of blood towards those organs, the monthly ion which ends in the ulceration of a portion of their surface, and merous vicissitudes to which they are amenable from conception, acy, and delivery; and then asks, if an organ endowed with such an of formative energy, so abundantly supplied with blood, and living ve a physiological life, is not to have its career chequered by a cor- ling amount of morbid action? Answering in the affirmative, Dr. oves the assertion by referring to older writers, and to Morgagni, who If I were to enumerate all the lesions of the ovaries and oviducts I have seen in my dissections, this (my forty-third) letter would be gest of all". He refers to Drs. Ashwell, R. Lee, and Copland, and Treatises on Pathological Anatomy and on Diseases of Women; cites more particularly those, who, like Ritchie, Barry, Negrier, etc., engaged in minute physiological researches, have often detected testimonials of inflammation in small portions of the ovary, and pally in the ovarian vesicles; false membranes or pus, which, be the ty found ever so small, sufficiently prove that they were secreted by lamed surface. Having, satisfactorily, proved the much greater fre- y of Ovarian disease than is generally supposed, Dr. Tilt explains ertain of its forms have been so little recognized.

On account of the diminutive size of the ovaries, and their being so seated in the abdomen, and so difficult of access.

Because the symptoms by which their morbid states are manifested, such pain in the back and the sense of bearing down—symptoms which are pression of ovarian sufferance, reacting on the spinal marrow—have so long called *uterine*, and therefore supposed always to denote uterine

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[1] e work of M. Chereau (*Maladies des Ovaires*. Paris: 1844) has not been translated glish, but an excellent analysis of it is given in the *Edinburgh Monthly Journal* for y 1845, p. 38.

disease, that the pathologist expects always to find in the uterus the cause of the disease,—a view of the case in which he is further confirmed when he detects proofs of uterine morbid action, which has been itself often directly caused by morbid ovarian irritation.

According to Dr. Tilt:—Subacute ovaritis, and inflammation of the neck of the womb, having some very characteristic symptoms in common, are often confounded with each other; and thus ovaritis is often really cured by the treatment made use of to remove inflammation of the womb. These views are well supported by physiology and pathology; and we have been forcibly reminded of their truth, by the perusal of revelations which Dr. Oldham has lately given to the medical public, in a valuable contribution to *Guy's Hospital Reports* for October 1849. A sterile lady came from Jamaica to London. She was quite well; but she had been told by her medical attendant in Jamaica, that if she placed herself in the hands of some of the eminent London practitioners, her marriage might become fruitful. She did so; and a London obstetric physician, believing with the Jamaica practitioner, that the opening of the womb was not sufficiently large, slit it up with a cutting instrument. The lady was then condemned to wear, amidst atrocious sufferings, the uterine stem-pessaries. Acute peritonitis was brought on by this treatment, and the patient died. Dr. Golding Bird, who had been incidentally called in, gave the history of the case to Dr. Oldham, and requested him to open the body. Death had been caused by acute peritonitis; the uterus was found sound; the Fallopian tubes were diseased; and the ovaries presented traces of sub-acute inflammation, sufficient to explain the long-standing sterility. This, we fear, is an authentic representation of many similar cases, which now remain unpublished by those to whom they occur: it shows the danger of such energetic treatment for an infirmity which is, after all, problematic in its nature.

Dr. Tilt divides Ovaritis into, 1, the sub-acute; 2, the acute.

Sub-acute ovaritis is defined to be, "inconsiderable swelling of the ovaria, with increase of heat and pain on pressure, accompanied by intermittent or permanent pain, or by uneasiness in the ovarian region, radiating to the loins and thighs, and producing, according to the constitution of the patient, amenorrhœa, dysmenorrhœa, sterility, or hysteria".

By *sub-acute* inflammation, as distinguished from *acute*, Dr. Tilt does not imply any difference in the intrinsic nature of the morbid phenomena, but the delimitation of the inflammatory action to certain distinct parts of the ovaries, as the ovarian follicle, and to portions of the ovarian tissue so small, that they give rise to little swelling, and to no febrile action; and he points out, as peculiar properties of the sexual system in women, the liability to inflammation of certain portions of the generative intestine, in which the others may not participate—a peculiarity to which the ovary is still more liable, on account of its complex structure. Having already alluded to the pathological anatomy of sub-acute ovaritis, we pass over that section, and arrive at the causes, which are studied according to their nature and effects, with a care and minuteness not to be found in other works.

The causes are divided into the predisposing and the exciting. 1. The predisposing are, the function of the organs and the lymphatic temperament. 2. The exciting causes are, the arrest of the menstrual flow by the numerous means we are acquainted with; vulvar irritation, leucorrhœa, and inflammation of the neck of the womb, and also sometimes the very cauterizations which are employed to cure these diseases. Dr. Tilt quotes Gendrin as having seen cases of this description.

We must refer our readers to the original papers, for an account of the symptoms of the disease, and of the modes of exploration of these organs, in order to establish our diagnosis; and we must turn to what our author calls the "terminations", but what we should rather term the different forms of ovaritis. Dr. Tilt carefully remarks, that he does not pretend that amenorrhœa,

be met with in the best works on the subject, not even in Dr. Henry Bennet's work, *On Inflammation of the Womb and its Appendages.*

Dr. Tilt defines acute ovaritis,—considerable swelling of the ovaria and of the surrounding cellular tissue, with febrile reaction, formation of pus, its elimination and absorption.

There is nothing new under the head of pathological anatomy; and with respect to the causes, the author refers the reader to the causes of the sub-acute form, as the same agents give rise to both diseases: the increased energy of these agents, and a constitutional proneness to be affected by such causes, explaining sufficiently the production of acute ovaritis. The symptoms vary according to the size of the tumour, but we cannot enter into their details.

The terminations of acute ovaritis are stated to be—I. Resolution. II. Elimination. III. Metritis and inflammation of the oviducts. *Resolution* is admitted not to be uncommon, and even sometimes to take place when the quantity of pus is very considerable. *Elimination.* The pus has been known to find its exit by the skin, intestine, bladder or vagina, and into the peritonæum. The vaginal opening is the most felicitous, and the effusion into the peritonæum the most fatal. The author gives an interesting case, to prove the possibility of the transmission of inflammation from the inflamed ovary to the womb, and a sketch of the inflammation of the Fallopian tubes, wherein he shows how retention and effusion of the menstrual flow can produce certain pelvic tumours very little understood. When discussing the treatment, the author shews how the mercurial frictions and the rectal and vaginal injections advised in the sub-acute form are here inapplicable, on account of the inconvenience and pain they occasion. He recommends an active treatment; and with regard to the pelvic cysts, he advises to study where nature attempts to effect an opening, and to follow her indications, preferring to open such tumours by means of the repeated application of Vienna paste, to opening them by the knife.

Dr. Tilt deserves well of the profession for his elucidation of ovarian disease. The field he has chosen is too much neglected, and a complete treatise on ovariology is very much wanted. We hope that Dr. Tilt may continue his researches, and produce such a work as we allude to.

CAUSES AND TREATMENT OF PUERPERAL METRO-PERITONITIS: WITH THE STATISTICS OF THAT DISEASE IN THE HOSPITALS OF PARIS.

By Dr. Maurat.

The paper from which we make the following extract is a thesis of considerable merit, which has been re-printed in the *Revue Médico-Chirurgicale* for September, 1849, pp. 129. The author's object is to explain and enforce the system of prophylaxis and treatment pursued at the Hopital St. Louis, and to contrast the statistics of Puerperal Fever in that institution with those of the other Parisian hospitals. The discrepancy is striking; but much of the value of the lessons to be learnt from it, is lost by no detail being furnished of the treatment pursued in each of the establishments. After speaking of the predisposing, general, and occasional causes of Metro-Peritonitis, the author unfolds his views. The following is a translation of part of M. Maurat's thesis.

"The cause which, in the great majority of cases, gives rise to Peritonitis in Puerperal women, and which may be called the most essential cause, is a chill; with which, however, I would not have confounded the rigour which ushers in every local inflammation. So far back as 1573, Ambrose Paré made the first step to this discovery. "The recently delivered woman", said he, "must have the womb carefully preserved from contact with cold air; for, being empty and gaping after childbirth, it becomes readily filled with cold air, which induces swelling and distension, closes up the uterine sinuses, checks the lochia, and induces in this way engorgements

ALLEGED CAUSE OF STERILITY, DESCRIBED BY DR. VANONI, AND SAID BY HIM TO BE LITTLE KNOWN.

In *Il Progresso*, a medical journal lately established at Florence, Dr. VANONI has published a paper on what he terms a little-known cause of Sterility. He alludes to a want of due development of the uterus, or atrophy coming on after the organ has acquired its proper volume. The author seems to have entirely overlooked the fact, that the former class of cases, are, when curable, simply cases of tardy puberty, and that the small uterus is simply the result of ovarian torpor continuing beyond the usual age. Uterine atrophy coming on from sexual excess, or other cause afterwards, is an interesting fact; but to speak of it as a cause of Sterility does not seem to be correct, because both it and the Sterility are the consequences of ovarian disorder. The disease of the ovaries, if slight or functional, may be curable by rest, moral discipline, and other means; but, if serious and organic, the diminution in the size of the womb, and the associated barrenness, may be beyond remedy. They may depend on lesions produced by inflammation of the ovaria. With this brief explanation of our views as to the proper aspect in which to regard Dr. Vanoni's paper, we give below an abstract of it from the *Gazette Médicale de Paris* for 17th November, 1849.

CASE. A woman aged twenty-one, who had been three years married, enjoyed excellent health, but remained sterile. Dr. Vanoni found the neck of the uterus high up in the vagina, of diminutive size, very hard, cold, and insensible. The orifice could hardly be felt, unless the finger were pressed against it with some force: the opening was circular. The base and the summit of the uterine neck were of equal dimensions: the central portion was slightly more voluminous, so that this expansion in the middle gave to the totality of the uterine neck somewhat the form of an olive. The body of the uterus, (as explored by having one hand in the vagina, and the other on the hypogastrium,) appeared to be very small, but of normal shape. The heat of the vagina contrasted strongly with the very low temperature of the cervix uteri. The mammæ were somewhat less developed than they usually are at her age. Intercourse was destitute of sensual gratification, but did not occasion any repugnance. After ten years of sterile matrimony, she had an infant, in 1837, and afterwards two others.

Dr. Vanoni inferred from this case, that want of development of the cervix uteri is not necessarily incurable. Pursuing his investigations, he recognized the same characters of the cervix in a woman, aged forty, who, at nineteen had had a child, had then become addicted to libertinage, and had never again conceived. In this case, therefore, the uterine atrophy was not congenital. In several other women, married at such ages as thirty, thirty-two, thirty-eight, and forty, he recognized the same condition, to which he proposes to give the name of *hystero-trachelo-atrophy, or metro-trachelo-hysteria*. They did not become mothers, in spite of their anxiety to have children, and of the most assiduous performance of their conjugal duties. When these cases came under his notice, he was not able to find a remedy. In 1838, he was consulted by a lady aged twenty-three, who had been married for two years. Her menstruation was irregular as to time and quantity; and she presented the same conditions of the cervix as were described in the first case. She was devoid of sexual desire, sterile, and distressed at her sterility. Horse exercise and ferruginous waters were prescribed. In two years, the menstrual function had become natural, and the cervix a little larger, measuring from six to seven lines in length. In the following year, (1840,) the length had increased to thirteen or fourteen lines; and in 1842 to fourteen or fifteen lines. Its tissue was soft, and in some points spongy. As these changes progressed, the venereal appetite likewise went on increasing; and seven years after marriage, she was con-

boy. Two other analogous cases are detailed. In one, pregnancy after nine, and in the other, eleven years after marriage.

noni is of opinion that the natural stimulus, i.e. repeated sexual se, is the best means of curing imperfect development of the f re-establishing its dimensions, normal texture, and functions, and ng an aptitude for fecundation. If, however, marriage be cor- o late in life, the imperfect development may become permanently and then what is usually efficient will be powerless. The author hat if sexual intercourse be commenced before the patient have her twenty-ninth year, we may hope for the uterus becoming natural

ENCE BETWEEN ANCIENT AND MODERN TREATMENT OF UTERINE DISEASES.

(30, in our review of Dr. H. Bennet's work, we gave extracts show- ntiquity of the SPECULUM; and now, by the following extract from n the *Provincial Medical and Surgical Journal*, of 27th June, by Mr. man, of Norwich, it appears that the UTERINE SOUND and other re- stetric novelties are only re-discoveries, having been known two l years ago.

xamples,' says Mr. Copeman, "of the re-introduction of ideas and practice in existence centuries ago, yet in the present day attract he attention of novelty, disseminated, too, by physicians whose posi- atives the possibility of their practising dissimulation, we may adduce iews lately promulgated with respect to torsions and flexions of the described as causes of disordered menstruation and sterility. Hippo- n his chapter on "Diseases of Females", describes these very diseases, is their effects and proper treatment. For instance, he attributes deranged states of menstruation to occlusion and distortion of the os 'Morbus fit, si uterorum os conclusum fuerit, aut *distortum*.' Si ocum quid fuerit, menses exitum invenire non poterint *priusquàm sanam naturam redierint*. Aliquando dum ipsi uteri obtorquentur, *ipsorum distorqueri* contingit.' Again, he speaks of occlusion and n as causes of sterility, and advises the very same treatment said to recommended and practised by Dr. Simpson, of Edinburgh. 'Si os *nclusum* fuerit, *tædis et plumbeis fistulis immissis aperito*. Quibus *distortum* est, et ad coxam allapsum, per digitum avulsum à coxâ o. Quum autem discesserit, *tædis et plumbeis fistulis tantisis*, juxta rationem, *in rectitudinem dirigito*.' What is this, but the uterine Hippocrates also mentions the os uteri being open *magis quàm* and its being thick and fleshy, as causes of sterility. Another consid ribes to a membrane obstructing the os uteri, evidently not refer- the hymen, for his treatment consisted in destroying the membrane, ducing lint covered with a stimulating application, *quam penitis- ad extremitatem alligato*.[1]

s curious to observe how completely modern discoverers have been ded, and that the knowledge of these conditions of the uterus was as perfect (though probably not so diffused) two thousand years ago, e present time.

[1] Latin translation. Folio edition. "De Morbis Mulierum." Lib. I. F 3 C 4 page 376. Lib. I. D 29-30, page 327-8 C 35 379.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

MONDAY, NOVEMBER 12, 1849.

DR. ADDISON, PRESIDENT, IN THE CHAIR.

CASE OF FOREIGN BODY IN THE RIGHT BRONCHUS. BY JOHN G. FORBES, M.R.C.S.—Mrs. W——, aged forty-six, applied to the Western General Dispensary, on May 11th, 1849, stating that on the previous day, whilst eating some broth, a small piece of solid matter, which she believed to be "bone, covered with gristle," passed into the windpipe. She was immediately seized with spasmodic cough and threatened suffocation, and it was some minutes before she recovered herself. Twenty-four hours after the accident her voice was hoarse; respiration slow and wheezing; there was a constant short cough and pain in the upper part of the chest. On the right side the natural vesicular murmur was scarcely audible, and a prolonged and peculiar rhonchus was heard throughout the lung, but most distinctly over the point to which the pain was referred. On the evening of the third day, the patient was affected with considerable constitutional disturbance, ushered in by a long shivering fit. On the fifth day (May 14), when the author visited his patient, he was accompanied by Dr. M'Intyre, Mr. Arnott, and Mr. Anderson. A remission of symptoms had suddenly taken place; and it was decided that an operation should not then be performed. On the 16th, the cooing sound had degenerated into a peculiar whiff or puff. The expectoration was more copious, and the cough troublesome, and aggravated by the slightest exertion or excitement. Mr. Arnott again saw the patient, in consultation with the author and his colleagues; but as the symptoms of the patient were not very urgent, and it was very uncertain exactly where the foreign body was fixed, it was thought prudent not to operate. During the ensuing fortnight, the symptoms were, disturbed nights, paroxysms of fever, profuse night sweats, etc.; and the cough assumed a more paroxysmal character. On June 1st, the symptoms were further aggravated, the expectoration becoming more abundant. After this date, until June 21st, there was a considerable amendment in the general condition of the patient; but on the 22nd, the expectoration assumed a dingy appearance, and offensive odour; the breathing and pulse were hurried. On the 25th, the fœtid, purulent expectoration was increased, and the constitutional disturbance further aggravated; and from this time she never rallied, but died on the 5th of July.—*Autopsy*: the carotid artery of the right side was observed to take an abnormal course, running obliquely upwards, and to the right side, in front of the trachea. The right lung filled its own side of the chest, and in its inferior two-thirds, was adherent to the ribs and diaphragm; and close upon the latter, in front, there was a pleuritic abscess, the size of the palm of the hand. The foreign body, a small piece of bone, weighing when dry three grains and a half, partly rough and sharp, and in part smooth, was found firmly impacted in the orifice of the third branch, given off from the bronchus, which passed into the middle lobe; a circumstance which accounted for the fact which had been noticed during life, that air passed with comparative freedom into the upper part of the affected lung. The lower two-thirds of the same lung were of an ashy slate colour, of dense consistence, very offensive odour, and infiltrated with a purulent fluid. That part of the upper lobe which was supplied with air appeared healthy. The author concluded by directing attention to the risk which would have been incurred, of wounding the right carotid artery, had an operation been attempted.

Dr. SIMSON said, that the foreign body in this case fell, as is usual and

such cases, into the right bronchus, which is almost straight in when compared with the left. An important sign of the seat of n body in such cases is afforded by the fact, that the movements of of the parietes of the chest, over the obstructed part of the lung ied, absent, or even reversed, in proportion to the amount of obstruc- n this case, the movements of respiration were lessened over the part, while they were doubtless exaggerated over the unaffected part ht lung, and the whole of the left. If a foreign body enter a bron- will be easier for the air behind it to find its way out during expira- n for the air to enter the obstructed bronchus during inspiration, the ng forced more inwards by the advancing column of air. The con- must be, that the amount of air in the obstructed portion of lung essened, and that portion will be diminished in size, and less resonant ssion. The lessened or reversed respiratory movements, the dimi- ize of the chest, and the comparative dulness on percussion over the ed portion of the lung, taken in connexion with the auscultatory d with the exaggerated respiration over the unaffected portion of uld scarcely, in any instance, fail to point out with accuracy the seat bstruction, when it was known that a foreign body had entered the

just occurred to him, that possibly a foreign body in one of the might be removed by the aid of a miniature air-tractor, like that in- by Dr. Simpson, placed on the end of a tube, converted into a sy- means of a piston.

J. B. Williams said, that the body was so small, and of so peculiar that it was scarcely to be expected that much physical indication resence would exist; and yet, in the beginning, peculiar signs did Very few cases of a foreign body in the air tubes would occur, in careful examination of the effects of position, and of the state of piration, would not develope some physical signs of its presence. igns, however, would vary with the size and form of the body itself. n angular body would rarely, if ever, produce such total obstruction mentioned by Dr. Sibson, and therefore that sign of itself was not garded as characteristic in all instances. The pathological changes cases were rather those of irritation than of obstruction, and there not be absence of respiratory murmur, nor would there be falling in chest. It was only round bodies that produced complete occlusion, he case related during the last session, in which a round pebble com- plugged up one of the bronchi, and where the respiratory sound on de was absent. Generally, however, the foreign body was moveable, ere the sound would soon indicate its presence. With regard to the ular situation of a body in the right bronchus, this was generally easily determined by examination of the back than the front of the as the tube there was nearer the surface. The pathological changes ook place in the lung, at this part, and these changes illustrated the nce of a foreign body on the textures; at first there was irritation, cough, and dyspnœa, often of a convulsive and spasmodic character, constant and frequent than that which resulted from the body coming ntact with the glottis, and to which he did not allude. Smooth bodies occasionally remain a long time in the bronchial tubes without pro- g any ill effects, but when rough, or like that observed in the present they soon gave rise to a peculiar kind of inflammation attended by ticular class of signs and symptoms. This inflammation passed into a ic state, and was attended by a purulent, sanious, and even fœtid rge. Mr. Liston, indeed, had sometimes diagnosed the presence of n bodies almost entirely by this putrefactive smell, and in an unique —which had been related by Mr. Hamby last session, and which he

n account of this interesting case is given at p. 777 of the London Journal of Medi- for August 1849.

regretted had not been published in the *Transactions*—a portion of ossified cricoid cartilage had come away by ulceration, and escaped into the bronchial tube; and though the signs of a foreign body in the air-passages were present, it was not at first suspected, as the larynx was much diseased. The body was expelled, by cough, through the opening in the trachea, however, some time after tracheotomy had been performed by Mr. Liston; but after death, a portion of cartilage was found in the opposite—the left—bronchus, having evidently become displaced after the operation. The pathological changes here were, as usual, indicated by irritation, fœtid breath, etc., and consisted of consolidated lung, purulent infiltration, and low suppurative pneumonia. This case, among many others, was one exceedingly illustrative of the propriety of performing an operation for the removal of the foreign body as soon as possible after its presence was discovered. The evils of opening the trachea, he thought, were overrated, for he did not see much to apprehend, if it were resorted to before constitutional symptoms and morbid changes had presented themselves; but when bronchitis had supervened, the entrance of the cold air into the tube might be injurious. In the case before the Society, looking at all its details, he could not help thinking that an operation, if early performed, might have been successful; and looking at the results of non-interference in these cases, at the irritation extending deeper and deeper, at the inflammation and its natural consequences, he thought the operation should be resorted to, where practicable.

Mr. Arnott had seen this case five or six days after the foreign body was said to have escaped into the bronchus; and it was then a question whether it consisted of bone or gristle. Symptoms of the presence of a foreign body had existed, but at that time were absent—there seemed to be a lull in the case. Here was a woman previously ill with pain in her side, without any urgent symptoms, the foreign body probably gristle; certainly the case was not distinct enough in its features to warrant an operation. The foreign body was found after death in the third branch of the bronchus; but even if this had been known before, how difficult it would have been to remove a body, grasped as this was by, and filling, the tube. To get the forceps so low down would have been almost impossible, though they might be safely employed, perhaps, in the first or second division of the tube. The case was altogether different from that of Mr. Brunel, in which the foreign body was moveable. He looked upon this case as important, as having been minutely and accurately given; and if a precisely similar case should occur, looking at the certain results of non-interference, he should certainly operate, but with no great confidence of success. In this very case, however, the course taken by the carotid might have resulted, had an operation been performed, in the death of the patient on the table, from a wound of the artery; and it indicated the necessity of carefully examining the parts at the upper portion of the sternum, when about to operate in that neighbourhood.

WESTMINSTER MEDICAL SOCIETY.

November 3, 1849.

Francis Hird, Esq., President, in the Chair.

Abortive Discussion on Chloroform. Mr. Gibson stated the results of thirty-two cases of parturition in which Chloroform had been given, which had come under his observation. All the patients were at the full period. In three, the forceps were applied; of which cases, one mother died of puerperal fever five days after delivery; all the children were born alive. In one case, turning was had recourse to; the child was still-born. The remaining twenty-eight cases were natural labours. Eighteen of the children were females; fourteen were males. Hæmorrhage did not occur in any case; nor was there delay in the expulsion of the placenta. Two suffered from intense headache for some hours after delivery; one of the patients

ubject to hysterical headache for years; but the other had rarely in the head, previous to the inhalation of the chloroform vapour. did any permanent ill effects follow. The largest amount of chlo- de use of, in any one case, was two ounces and a half; and this led over nine hours—the longest period of inhalation in any of us dreams or remarks had occurred in only two out of a large f cases in which Chloroform had been inhaled for various purposes. halgh concluded by giving it as his opinion, that although this sionally produces dangerous and even fatal effects, yet if cases be y selected, the remedy cautiously administered, and its effects pro- ghed, it may often be advantageously given both in natural and tal labours.

NRY BENNET had administered Chloroform, in obstetric cases, ever introduction by Dr. Simpson, and he was thoroughly in favour of yment under certain circumstances. He had used it in three classes in cases in which irritation of the system was kept up by fear or ses, and the parturient efforts interfered with. In them, it allayed ary pain, and quickened the labour. A young woman, in her first, ad little energy, and seemed overwhelmed with pain and mental nt. The head had advanced into the pelvis, but there was excessive y, with cerebral symptoms. The bad symptoms all gave way under rm, and the pains became natural and expulsive. In such cases, eeding and opiates were formerly resorted to, he had found Chloro- ich better. This medicine seemed to act directly on the cerebro- ystem of nerves. The *second class of cases* were those in which opera- edure was necessary; not only did the Chloroform relieve unnecessary t facilitated the efforts of the accoucheur in delivering his patient. *le parturition*, he did not give Chloroform, except at the request of ent. In no case had he seen ill effects fairly attributable to Chloro- In one instance a lady died in child-bed three weeks after delivery, he influence of Chloroform; but the fatal result was dependent on an disease of the heart not discovered during life. In one case, also, ight *hæmorrhage* had occurred; it was easily arrested, and was not the medicine. The *third* class of cases were those of inflammatory of the uterine neck, in which it was necessary to apply caustic, or to ; it relieved pain, fear, and neuralgia, and was most valuable, as it o after operations in relieving pain. He had never seen it give rise cent talking; on the contrary, he had seen it have a temporary good n cases of nymphomania.

W. F. BARLOW thought that some persons made too light of pain, and ated its complex effects upon the body. Let them turn to Mr. Travers's n *Constitutional Irritation*, and there read of deaths from the shock n. Pain had remote effects as well as immediate, and the former were be forgotten. The remark was quite applicable to the pains of partu-

As to the question, Can Chloroform be safely administered in labour? one which facts only could determine.

had heard it said, that the production of anæsthesia in labour had shewn he action of the uterus was independent of the spinal cord. It showed g of the kind. How could it be said that the influence of the cord ithdrawn from the uterus, so long as respiration continued? Was it le to destroy the function of the cord below, and yet leave the medulla ata active, there being only one circulation for the whole cord? He peated, since last meeting, one of Dr. Tyler Smith's experiments. He isoned a Guinea-pig with the vapour of Chloroform, and found that no ction of the muscles followed the irritation of the spinal cord, not even a wire was suddenly thrust down the whole length of the vertebral

canal; the muscles were, however, very responsive to the action of galvanism.

Mr. Gream had tried both ether and Chloroform, to some extent, when they were first introduced; and had satisfied himself that, when given in the full doses, and for the long periods then in vogue, they were injurious and dangerous. Dr. Murphy had adduced no new facts; and he would ask Dr. Murphy why he had not quoted Meigs, Montgomery, and the like; and why he had not cited any London accoucheur in large practice, but had only referred to authorities of less weight? Mr. Gream maintained that chloroformists had now come to his way of thinking, as they owned that they did not now inebriate with the drug. Perhaps few gave it to any extent sufficient to influence the patient injuriously; and after this fashion he would *allow* his patient to inhale the vapour, though he would never *offer* it. There was neither danger nor the chance of danger in the present "pretended anæsthetic midwifery", which was chiefly an effect on the mind. Mr. Gream argued against the analogy between parturition in the sow, and in the human female. He stated that the removal of a portion of the spinal marrow, or the crushing of it, would not impede labour so much in the former as in the latter, who from the obliquity of the axis of the pelvis, and the greater comparative bulk of the young, (with reference to the outlet,) required the more complete assistance of the spinal system of nerves. Mr. Gream had observed the phenomena of parturition in pigs, and had noticed that there was very little voluntary expulsive effort. Primiparous women required the full benefit of the reflex spinal system, and of the voluntary muscles; and in them, Chloroform inhalation must retard parturition; but Chloroform must exert some control even over the ganglionic uterine action, or the action depending on the peristaltic movements of the uterus, as muscles only possessed the integrity of their power when supplied with good blood; but persons drugged with Chloroform had black and bad blood. Mr. Gream entered into a variety of topics illustrative of the injurious effects of complete anæsthesia in midwifery, and of the harmlessness of the pretended anæsthesia, which latter, he said, had supplanted the former.

Dr. Webster detailed three cases which had come under his cognizance (in Bethlem Hospital), showing the serious consequences sometimes following the inhalation of Chloroform during child-birth. In the first case, the patient was for three days incoherent. She soon afterwards became so furious, as to require confinement. After twelve months, she was discharged cured. In the second case, the patient never recovered from the effects of the Chloroform, and soon after delivery became quite maniacal, and continued so for many months, but recovered ultimately. The third case might not be considered as a true instance of insanity: however, he would relate the chief symptoms. The cerebral disturbance, following the use of Chloroform, never ceased entirely; the patient could not sleep at night, and often said she felt as if in the presence of a madman who was going to murder her. Three weeks afterwards, she became almost maniacal, exhibited much mental excitement, laughing frequently; conducted herself like an infant, and lost her memory, in which state she continued during five months, when recovery took place.

Dr. Murphy replied. He was anxious only for truth, and was glad to hear any well-authenticated facts on either side of the question. Doubtless there were some peculiar constitutions, in which Chloroform could not be given without ill effect, as was the case with opium, calomel, etc. To determine what were these constitutions, in what way to administer the Chloroform, and to determine its real value, was, and should be, the object of his inquiries.

November 10, 1849.

Dr. Snow, V.P., in the Chair.

Removal of a Tumour embedded in the Parotid Gland. Mr. Canton

following case: A man, æt. 60, had for several years been afflicted rosis of both eyes, for which mercury, strychnine, galvanism, and odies, had been ineffectually employed. Some time since, he com- a swelling, below the left ear, which had gradually increased. pain; but by degrees the resulting inconveniences were, difficulty tion and deglutition, and great impairment of hearing. The tumour wedged in between the ramus of the jaw and the mastoid process, chiefly towards the angle of the former. The skin over it was nd not adherent, and to the touch it was firm and resisting. On re- was seen to be an enlarged and apparently fungoid lymphatic gland, in a strong, fibrous-looking capsule. The hæmorrhage was trivial, atient recovered without any paralysis of the face, and with restor- he power of mastication, deglutition, and hearing.

HIPPENDALE said that Mr. Canton's case was another illustration of of the well-known surgical axiom, that the parotid gland could not ed by surgical procedure. Often a lymphatic gland, on removal, aken for the parotid itself.

TUMOUR, WEIGHING NEARLY THREE POUNDS, REMOVED FROM THE NECK OF A MAN, AGED FIFTY-SIX. By MR. HAYNES WALTON. A n before operation, was produced. The disease had existed for seven The tumour, also exhibited, had a cavity in its centre. Microscopic- ording to Dr. Routh and Dr. Peacock, it presented a fibro-cartilagi- ucture. The patient made a good recovery, and returned home in days.

NOVEMBER 17th, 1849.

FRANCIS HIRD, ESQ., PRESIDENT, IN THE CHAIR.

ONARY TUBERCLES IN A VERY YOUNG CHILD. DR. ROUTH exhibited gs of a child, not four months old, who had died of tubercular itis, *(hydrocephalus acutus;)* they were infiltrated with tubercle in age and form, miliary, grey and yellow, large masses of which, when , were found entirely softened. The bronchial glands were greatly d, and infiltrated with tubercle. The mother was phthisical, her s had died of phthisis. The infant, at birth, was a fine, large pparently healthy, but evidences were quickly developed of a strong ational taint, amongst which was cough, continuing during its whole

INSTRUMENT FOR APPLYING CAUSTIC SOLUTIONS TO THE URETHRA. MR. TH exhibited this instrument. It consisted of a catheter with a long , to the end of which was attached a spongy body of the same calibre, could be thrust out of the tube at any part of the urethra. The was saturated with the fluid, and thus applied.

GNOSIS AND TREATMENT OF CHRONIC DISEASES OF THE SKIN. MR. endeavoured to prove, that little or nothing could be learned of the or treatment of these diseases from the mere forms of eruption; and he variations of these appearances, were little more than the different in which inflammation of the dermis terminated, any of which forms arise, respectively, either from specific irritation, as in syphilis, or from al cachexia; that the origin was not distinguishable in the form of ion, both causes inducing various kinds of eruption; that the syphilitic must be diagnosed by their history rather than by their hue, and that vidence of primary affection was often obscure or wanting.

e author drew a distinction between skin disease resulting from con- , or other external sources of irritation, in which external applications be useful, and those diseases arising from within, in which external ations could not cure, but might do harm. He described the manage- required for the various complications of the eruption, such as febrile

action, functional or organic visceral diseases, anæmia, plethora, etc. And lastly, he described the treatment required for the simple spontaneous diseases of the skin, of whatsoever form or appearance, in all of which he had found a judicious and persevering course of arsenic the great remedy.

The medicinal action of arsenic was pourtrayed in four degrees, in the *first* of which it acted simply as a tonic, improving the appetite, invigorating the strength and spirits, and warming the extremities; in the *second* degree, exciting the mucous membranes and the skin; in the *third* degree, acting on the serous membranes, and exhausting the strength; in the *fourth*, showing its toxical effects. The first two degrees were described as salutary; the third injurious; and the fourth, dangerous. In small doses only it acts usefully as a medicine, and the dose should never be increased, but diminished, not discontinued, when the conjunctiva becomes affected. Five minims of Fowler's solution was the maximum dose, which the author always administered on a full stomach.

An interesting discussion ensued, in which Drs. Garrod, Lankester, Murphy, Sibson, Routh, Snow, and others took part.

APPOINTMENTS.

Bennett, J. Risdon, M.D., appointed Physician to St. Thomas's Hospital, in the room of the late Dr. Burton.

Corbett, Dr., elected Professor of Anatomy to the Apothecaries' Company of Ireland, in the room of Dr. Alcock, appointed to Queen's College, Cork.

Chisp, Dr. Edwards, elected Physician to the Metropolitan Dispensary.

Gannon, A. B., M.D., appointed Professor of Materia Medica and Therapeutics in University College, London, in the room of the late Dr. A. T. Thomson.

Heale, Dr., elected Physician to the Royal Free Hospital, in the room of Dr. Peacock.

Kirton, Percival, Esq., appointed Colonial Surgeon for the Settlements on the Gambia.

Peacock, T. B., M.D., appointed Assistant-Physician to St. Thomas's Hospital, in the room of Dr. J. H. Bennett.

Smith, Dr. R., elected by the Board of Trinity College, Dublin, Professor of Surgery in the School of Physic.

OBITUARY.

Brice, W., Esq., late Assistant-Surgeon of H. M. S. Blazer, aged 32, on 29th October.

Charles, Hugh, Esq., Surgeon R.N., at Fisher Row, near Edinburgh, on 23rd October.

Dobbin, W. W., Esq., Surgeon, at Newtownhamilton, on 1st November.

Frolliott, William, M.D., at Clonakilty, Ireland, aged 59, on 16th October.

Grazer, George R., M.D., at Porterlington, Ireland, on 25th October.

Fraham, Henry, M.D., of Edinburgh, at 2, Maitland Place, Newhaven, on 1st November.

Grant, Samuel, M.D., formerly of the Honourable East India Company's Service, at 121, Sloane Street, of Cholera, aged 71, on 13th November. He served most zealously for twenty-five years, and was present in many severe battles.

Hartwell, J. L. Esq., Surgeon, 2nd class, at Sydney, New South Wales, on 12th June.

Llewellyn, C., M.D., Surgeon, 40th Native Infantry, at Barrackpore, on 9th September.

Mackey, George, M.D., at Adare, county Limerick, lately.

Morton, Thomas, Esq., Surgeon to University College Hospital and to the Queen's Bench Prison, at his residence, Woburn Place, Russell Square, aged 35, on 30th October. This talented surgeon and most estimable man, died from prussic acid, administered by his own hand during a fit of insanity, connected with hypochondriasis.

Oldaker, Francis Allcock, Esq., Surgeon, at Brinklow, aged 30, on 4th November.

Orpen, T. H., M.D., at Queenstown, Ireland, on 3rd November.

Thomson, George, M.D., Assistant-Surgeon, 3rd Brigade Horse Artillery, at Lahore, of apoplexy, on 27th August.

Woodyer, Caleb, Esq., Surgeon, at Guildford, Surrey, aged 83, on 5th November.

Worrall, Joseph, M.D., at Limerick, on 6th November.

BOOKS RECEIVED.

Downing on Painful Affections of the Nerves. London: 1849. Knox (Dr. Alexander), on Cholera. Dublin: 1849. Lonier, Recherches sur la Paralysie Générale et Progressive. Paris: 1849. Report of College of Physicians on the Cholera Fungi. London: 1849. Hospital for Consumption, First Medical Report of. London: 1849.

AYRE, Dr, on calomel in cholera, 956

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BATEMAN-EDGE, Mr. W. H., on Chloroform, *rev.*, 550

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BARDY, M., his treatment of cholera, 669; on erythema cholerica, 1152

BASHAM, Dr., on nitrate of potash in rheumatism, 106

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BEGBIE, Dr. James, on connection of anæmia with goitre, 273

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BILLINGSEN, M., case of superfœtation in double uterus by, 1105

BILLING, Dr. A., on Cholera, *rev.*, 72; Principles of Medicine, *rev.*, 557

BIRD, Dr. G. G., on cholera, *rev.* 1115

——— Dr. Golding, case of anomalous spinal affection by, 55; on Electricity and Galvanism, *rev.* 1038

——— Dr. James, on tropical fevers, 43, 152; on cholera, 313, 715, 829; on the propagation of cholera, 1081; on Cholera, *rev.*, 1115

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